Natural Environment Study

Unincorporated Community of Jamul

San Diego County, California

WA #2C3000

District 11-SD

June 2009

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

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STATE OF CALIFORNIA
Department of Transportation
County of San Diego Department of Public Works

Prepared By: _____ Date: 1 June 2009

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Summary

The County of San Diego proposes to replace Lawson Valley Road Bridge, which has become structurally and operationally deficient. The bridge was built in 1948 and measures 21.5 feet wide and 27.75 feet long. Emergency repairs were performed on the bridge in February 2002. These repairs were necessary to prevent the collapse of the northeast side of the bridge. The California Department of Transportation (Department) has classified the existing bridge as structurally deficient. The proposed replacement project would remove the existing bridge and install a new crossing in the same location that satisfies all requirements under the Federal Highway Bridge Replacement Program, including compliance with American Association of State Highway and Transportation Officials' (AASHTO) geometrics, Federal Emergency Management Agency (FEMA) Flood Control, and National Environmental Policy Act (NEPA) requirements. This bridge replacement project is eligible for use of Federal Highway Administration (FHWA) Highway Bridge Rehabilitation and Replacement (HBRR) funds.

The project is located on Lawson Valley Road, 4.1 miles east of the intersection of Lawson Valley Road and Skyline Truck Trail, between Selva Road and Montiel Truck Trail (private roads), in southern San Diego County (Thomas Bros. pg. 1274 A3). The proposed bridge will cross over Lawson Creek East. The project site is within the United States Geological Survey (USGS) Alpine Quadrangle, NE 1/4 of Section 28, Township 1 South, Range 2 East.

The Lawson Valley Bridge Replacement Project's Project Impact Area (PIA) comprises approximately 1.19 acres in the unincorporated community of Jamul in San Diego County. General biological surveys and a wetland delineation were conducted within a 200-foot buffer around the PIA (study area) in 2005, and the vegetation mapping and wetland delineation were updated to reflect 2008 conditions.

According to December 2008 vegetation community surveys, the PIA supports 0.50 acre of coast live oak riparian forest, 0.04 acre of southern willow scrub, 0.02 acre of southern mixed chaparral, and 0.16 acre of non-native grassland habitat. Lawson Valley Creek runs through the study area. One sensitive plant species, San Diego sagewort (*Artemisia palmeri*), a California Native Plant Society (CNPS) List 4 species, is present and adjacent to the bridge within the PIA. One sensitive wildlife species, Cooper's hawk (*Accipiter cooperii*), was observed within the study area during 2005 surveys.

The proposed bridge project will temporarily impact three sensitive vegetation communities, including 0.329 acre of coast live oak riparian forest, 0.036 acre of southern willow scrub, 0.021 acre of southern mixed chaparral, and 0.145 acre of non-native grassland. These temporary impacts will require on-site mitigation at a ratio of 1:1, which will be achieved through revegetation of the temporarily impacted areas.

The proposed project will permanently impact 0.127 acre of coast live oak riparian forest and 0.015 acre of non-native grassland. Permanent impacts to coast live oak riparian forest will require mitigation at a ratio of 2:1, and permanent impacts to non-native grassland will require mitigation at a ratio of 0.5:1. Permanent impacts to coast live oak riparian forest would require 0.254 acre of mitigation. Permanent impacts to non-native grassland would require 0.008 acre of mitigation in the form of native grassland restoration. Required mitigation for permanent impacts to coast live oak riparian forest and non-native grassland is proposed on-site.

Jurisdictional wetlands and waters, which are under the jurisdiction of the U.S. Army Corps of Engineers (ACOE), the California Department of Fish and Game (CDFG), and the Regional Water Quality Control Board (RWQCB) were delineated on-site in 2008, and the delineation report has been incorporated into this NES report. ACOE jurisdictional areas within the PIA total 0.082 acre: 0.036 acre as wetlands and 0.046 acre as non-wetland waters of the U.S. CDFG jurisdiction totals 0.561 acre on-site: 0.538 acre as riparian habitat and 0.023 acre as streambed. CDFG riparian habitat includes ACOE wetlands and overlaps with ACOE non-wetland waters. ACOE non-wetland waters include CDFG streambed. RWQCB takes jurisdiction over ACOE and CDFG jurisdiction and, therefore, totals 0.561 acre.

Permanent and temporary impacts are expected to occur to jurisdictional resources. Bridge replacement would result in temporary impacts to 0.036 acre of ACOE wetlands/CDFG riparian habitat, 0.041 acre of ACOE non-wetland waters, 0.329 acre of CDFG riparian habitat, and 0.023 acre of CDFG streambed. Permanent impacts would include 0.005 acre of ACOE non-wetland waters and 0.127 acre of CDFG riparian habitat. Impacts to jurisdictional wetlands and waters are considered adverse and would require mitigation. Mitigation for impacts to riparian habitat would require creation, enhancement, or preservation at a ratio of 2:1. A minimum of a 1:1 ratio of habitat replacement and/or enhancement would be required for impacts to jurisdictional waters, wetland, and riparian habitat. In addition, a Streambed Alteration Agreement from CDFG, a 404 permit from ACOE, and 401 Water Quality

Certification from the RWQCB would be required. The County Department of Public Works (DPW) will coordinate with ACOE, CDFG, and RWQCB.

Suitable habitat was determined not to exist within the PIA for federally listed endangered arroyo toad (*Bufo californicus*), the federally and state endangered least Bell's vireo (*Vireo bellii pusillus*), or the federally endangered southwestern willow flycatcher (*Empidonax traillii extimus*). In addition, no arroyo toads were detected during focused surveys conducted in 2006 and 2008.

If possible, to avoid potential impacts to nesting raptors and migratory birds, including the Cooper's hawk, which was observed foraging over the PIA, vegetation clearing shall occur outside the raptors' breeding season (February 1 through July 1). If vegetation clearing is being proposed within the breeding season, a pre-construction raptor nest survey may be required. If active raptor nests are identified during the pre-construction survey within the PIA, a biological monitor shall be present on-site as necessary during construction to ensure that perimeter construction fencing is being maintained to minimize construction impacts and ensure that no nest containing eggs or chicks is "taken", as defined by the Migratory Bird Treaty Act (MBTA) or Fish & Game Code Section 86, until all young have fledged or the nest becomes inactive. Alternatively, the biologist will verify in writing to the County that nesting has occurred but has ceased and construction can occur without impact to nesting raptors.

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List of Abbreviated Terms

AASHTO	American Association of State Highway and Transportation Officials
BEPA	Bald and Golden Eagle Protection Act
BMPs	Best Management Practices
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFP	California Fully Protected Species
CNPS	California Native Plant Society
CSC	California Species of Special Concern
CWA	Clean Water Act
dbh	diameter at breast height
Department	California Department of Transportation
DPW	Department of Public Works
ESA	Environmentally Sensitive Areas
FAC	Facultative
FACW	Facultative Wetland
FE	Federally Endangered
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FSC	Federal Species of Concern
FT	Federally Threatened
HBRR	Highway Bridge Rehabilitation and Replacement
HDR	HDR Engineering Inc.
MBTA	Migratory Bird Treaty Act
NDDB	Natural Diversity Database
NEPA	National Environmental Policy Act
NES	Natural Environment Study
OBL	Obligate
PES	Preliminary Environmental Study
PIA	Project Impact Area
ROW	Right-of-way

RWQCB	Regional Water Quality Control Board
SE	State (California) Endangered
ST	State (California) Threatened
ACOE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Society
Varanus	Varanus Biological Services

Chapter 1. Introduction

This Natural Environment Study (NES) for the Lawson Valley Road Bridge Replacement Project, located in the unincorporated community of Jamul, San Diego County, California, has been prepared for the County of San Diego Department Public Works (DPW) and the California Department of Transportation (Department) (Figures 1 and 2). This report provides biological data and background information required for environmental analysis and has been prepared pursuant to Department guidelines. The purpose of this NES is to document the biological resources in the study area and provide an assessment of the impact of the project on these resources.

1.1. Project History

The replacement project is eligible for federal funds, and per the requirements set forth by the Department, a Preliminary Environmental Study (PES) was completed (County of San Diego 2002). Emergency repairs were performed in February 2002 to prevent the collapse of the bridge on the northeast side. Geotechnical boring studies were conducted in March 2003 in preparation for the bridge replacement design.

In October 2003 (and revised March 2004), a Biological Technical Report was prepared for this project, which consists of replacing the existing pre-cast concrete-slab-over-steel girder bridge over Lawson Creek, with a concrete slab bridge to meet current design standards. The March 2004 document was sent to the Department for their review; their comments (dated June 3, 2005) are reflected in the NES document dated July 2005 (RECON 2005). A revised project footprint is reflected in this NES document, which contains a detailed project description and summary of mitigation requirements.

1.2. Project Description

As a result of the need for emergency repairs to the Lawson Valley Road Bridge, the bridge has been classified as Structurally Deficient and currently has braced abutments (Photographs 1 and 2). The proposed plan has been updated since 2005 in order to minimize removal of existing trees, minimize disturbance to a designated archaeological site, and incorporate design features that enhance the visual appearance of the bridge to blend with the natural environment.

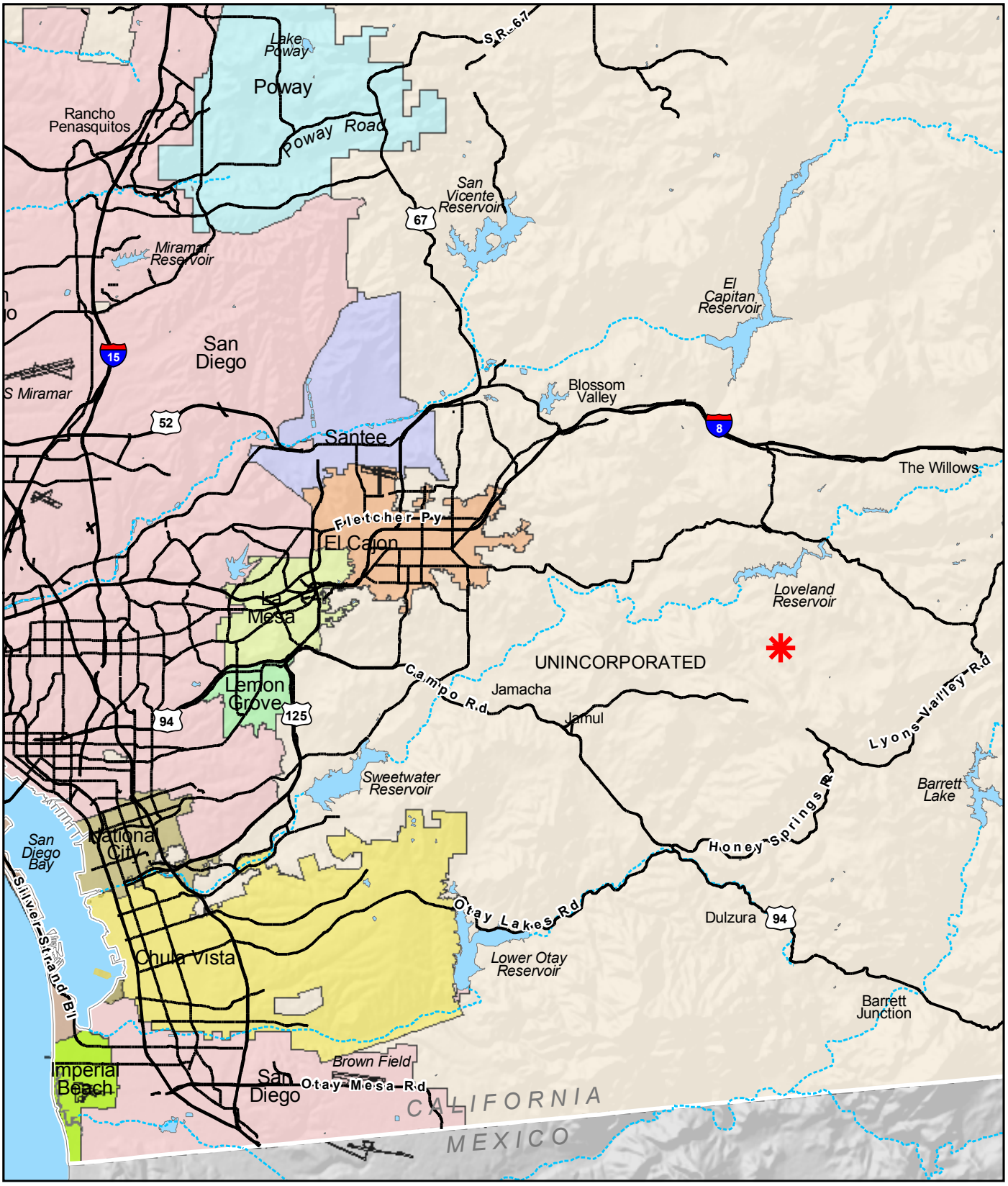

FIGURE 1
Regional Location Of Lawson Valley Road Bridge Project

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Map Source: USGS 7.5 minute topographic map series, ALPINE & DULZURA quadrangles, T16S R02E

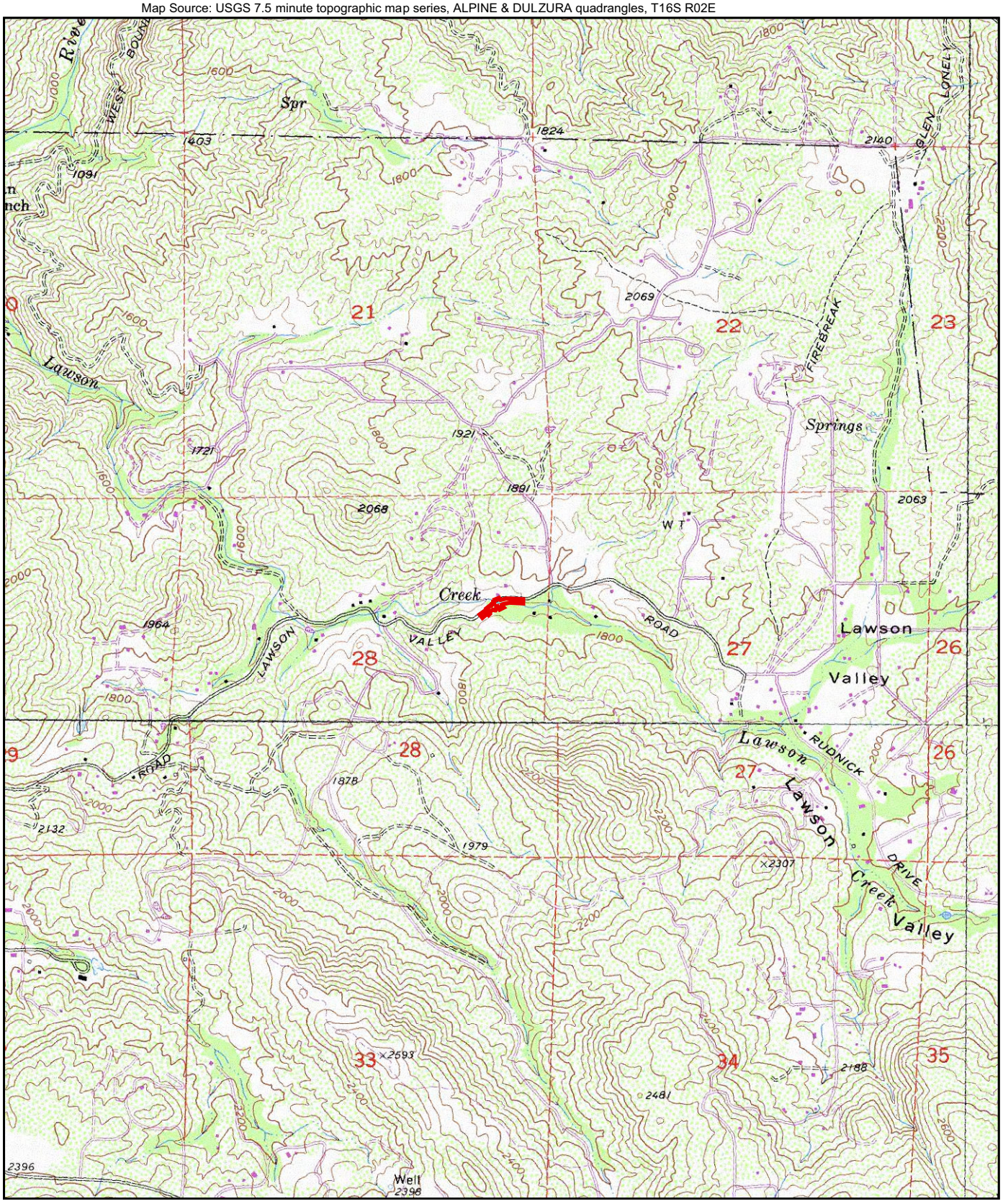

FIGURE 2
Location of Lawson Valley Road Bridge Project on USGS Map

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PHOTOGRAPH 1
Lawson Valley Road Bridge Looking West (2003)

PHOTOGRAPH 2
Lawson Valley Road Bridge Looking West - Side View (2003)

The replacement bridge will be single span, with a cast-in-place post-tensioned, concrete slab with seat-type abutments on spread footings. The proposed bridge, approximately 62 feet long and 32 feet 8 inches wide, will accommodate two lanes of traffic. Project construction will also require the realignment of Lawson Valley Road both horizontally and vertically to align with the proposed bridge.

The vertical realignment of the bridge is required to accommodate the high water surface elevation for the 100-year storm event. Therefore, the elevation of the existing bridge and the roadbed approaching the bridge will be raised. Due to the proximity of mature coast live oak trees (*Quercus agrifolia*) to the proposed road footprint, several mature oak trees are located within or immediately adjacent to proposed fill slopes. Small, localized retaining walls may be placed within the fill slopes in order to protect existing mature coast live oak trees. The retaining walls proposed will require little or no excavation (depending on location with respect to an existing archaeological site) and will utilize permeable backfill in order to minimize impacts to the root systems of the oak trees.

Outside the proposed paved roadbed for Lawson Valley Road (excluding the bridge), a three-foot parkway on either side of the road will remain unvegetated. Everything outside the three-foot buffer will be revegetated following completion of the project.

Three connecting driveways within the project area will be improved in order to accommodate the new alignment of Lawson Valley Road. The first 10 feet of each driveway will be constructed with asphalt concrete. The remainder of each driveway will be filled with dirt to achieve the appropriate slope. There is no required parkway for driveways.

The project will be constructed in phases to avoid increased environmental and archaeological impacts that would result from the construction of a temporary detour road. One lane of the existing bridge will be kept open to traffic and used while part of the old bridge will be removed and replaced with portions of the new bridge to accommodate one lane of traffic during construction. The current proposal is to construct the bridge in three phases. Phase I would begin with demolition of the southern (upstream) portion of the bridge and roadway. Phase II would include construction of the southern portion of the bridge and demolition of the northern (downstream) portion of the bridge and roadway. Phase III would include construction of the northern portion of the bridge and completion of the bridge structure.

Given that piers will not be constructed within the streambed and grading shall be performed from the creek bank, there may not be any necessity to cross the low flow for

the construction of the abutments. If any temporary water diversion and/or pumping are required within the streambed, clean water diversion procedures will conform to the provisions of Section 19-3.04, "Water Control and Foundation Treatment," of the Department Standard Specifications and Special Provisions, and are summarized in the Best Management Practices (BMPs) section below. Construction is scheduled to take approximately 18 months.

1.2.1. Construction Phasing

All construction will take place during daylight hours between 7:00 A.M. to 7:00 P.M. The following is a description of planned construction phasing, schedule, and equipment use for the Lawson Valley Bridge Replacement Project:

1.2.1.1. PHASE I CONSTRUCTION

Traffic will be routed to a single lane on the bridge, and a portion of the bridge will be demolished. This process will include:

- Installation of a silt fence around the entire project impact area and orange fencing around identified Environmentally Sensitive Areas (ESAs);
- Pre-construction inspection of the PIA for bird nests if work occurs between February 1 and July 1;
- Implementation of one-lane traffic on the north side of the existing bridge to include widening the road by placing asphalt pavement along the north side of the road; placement of retaining wall at the northwest corner of the bridge; bolted k-rail; stop signs; and flashing beacons at both ends of the one-lane traffic;
- Grading of the upstream side of the channel;
- Demolition and removal of the southern portion of the existing bridge;

Equipment that will be used during this phase will include: 50-ton crane; concrete cutter; wrecker; large excavator; dozer; loader; water truck(s); backhoe; grader; generator; and air compressor.

1.2.1.2. PHASE II CONSTRUCTION

The construction of the southern portion of the bridge will be completed. Traffic will then be shifted to this newly constructed portion of the bridge to allow for demolition of the northern portion of the bridge. This process will include:

- Placement of the southern half of the abutments;
- Construction of the southern portion of the bridge deck and retaining wall;

- Construction of the southern portion of the road;
- Construction of the two driveways that intersect the southern half of the road;
- Construction of the brow ditch on the southern half of the road;
- Installation of rock slope protection on the southern half of the road;
- Excavation within the channel on the north side of the bridge as required per the Channel Grading Plans;
- Demolition and removal of the northern portion of the existing bridge;

Equipment that will be used during this phase will include: 50-ton crane; concrete cutter; wrecker; large excavator; dozer; loader; water truck(s); backhoe; grader; flat bed trucks; concrete pump truck; concrete delivery trucks; generator; and air compressor.

1.2.1.3. PHASE III CONSTRUCTION

Grading of the channel on the downstream side of the bridge will be completed to accommodate the construction of the abutment and deck of the north portion of the new bridge. The construction of the northern portion of the bridge will be completed. This process will include:

- Placement of the northern portion of the abutments;
- Placement of the northern portion of the bridge deck;
- Construction of the northern portion of the road;
- Construction of the driveway intersecting the northern half of the road; and
- Construction of the brow ditch to the north of the road.
- Placement of closure concrete to produce a single complete structure;

Equipment for Phase III will include: 50-ton crane; large excavator; dozer; loader; water truck(s); backhoe; grader; flat bed trucks; concrete pump truck; concrete delivery trucks; generator; and air compressor.

1.2.2. Construction Staging and Equipment

The main equipment staging and material storage area will be located outside of the PIA, approximately 0.5 mile away at the Fire Station, at the intersection of Lawson Valley Road and Montiel Truck Trail. There may be some temporary storage of material within the PIA during construction that will occur on disturbed areas along the road and will be protected by proper BMPs by the Contractor. The main haul/access road will be Lawson Valley Road and 20-foot-wide access paths to the creek bed on both sides of the existing bridge.

The equipment noises will be intermittent and will be for short durations during the operation of the equipment. The equipment will be located at the project site, as necessary during daylight construction hours from 7:00 A.M. to 7:00 P.M.

For public safety considerations, Lawson Valley Road may have to be temporarily closed during daytime for several operations such as earthwork, foundation work, and falsework erection and removal.

1.2.3. Best Management Practices

During bridge demolition and construction, standard BMPs, as outlined in the Water Pollution Control Plan would be implemented. The BMPs may include but are not limited to:

- Temporary check dams
- Temporary fiber rolls
- Temporary gravel bag berms
- Erosion control stabilizing emulsion
- Temporary concrete washout facility
- Temporary stabilized construction entrance
- Spill prevention and control
- Street sweeping and vacuuming

Potential erosion and sedimentation impacts during construction would be mitigated through measures such as:

- Construction of a check dam on the upstream side of the creek with gravel bags covered with plastic sheeting to collect water.
- The collected water will be pumped into a desiltation basin, to remove any sedimentation prior to the water draining back to the creek. The graded portion of the roadway may be used for the construction or placement of the sedimentation basin. The basin will be sufficient in size to accommodate the sedimentation process. When the basin is removed, all sediment will be removed from the site and disposed outside the highway right-of-way.
- Pumps will be electric or muffled and situated to minimize disturbance to residents.
- As the water settles in the desiltation basin, the clean water from the top of the basin will be drained through a hose fitted with a filter to downstream creek flow area, behind a gravel bag check dam. Check dam heights and pipe (or hose), pump, and

desiltation basin sizes will be determined based on the amount of flow in the creek at start of construction.

Chapter 2. Study Methods

2.1. Regulatory Requirements

Impacts to resources under the jurisdiction of the ACOE, CDFG, and RWQCB would require the following permits/approvals: a 404 Nationwide Permit (which may include #14 Linear Transportation Crossing, #25 Structural Discharges, and #33 Temporary Construction Access and Dewatering) from the ACOE, a Streambed Alteration Agreement from the CDFG, and a 401 Water Quality Certification from the RWQCB.

2.1.1. Applicable Federal Regulations

Federal Endangered Species Act. The federal Endangered Species Act of 1973 (ESA), as amended, 16 U.S.C. 1531 et seq., provides for listing of endangered and threatened species of plants and animals and designation of critical habitat for listed animal species. The ESA also prohibits all persons subject to U.S. jurisdiction from "taking" endangered species, which includes any harm or harassment. Section 7 of the ESA requires that federal agencies, prior to project approval, consult USFWS and/or the National Marine Fisheries Service (NMFS) to ensure adequate protection of listed species that may be affected by the project.

National Environmental Policy Act of 1969 (NEPA) (Public Law 91-190; 42 U.S.C. 4321 et seq.). The NEPA mandates federal agencies to consider and document environmental impacts of proposed actions and legislation. Also mandates preparation of comprehensive environmental impact statements where proposed action is "major" and significantly affects the quality of the human environment.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 et seq.) is a federal statute that implements treaties with several countries on the conservation and protection of migratory birds. The number of bird species covered by the MBTA is extensive, and is listed at 50 CFR 10.13. The regulatory definition of "migratory bird" is broad and includes any mutation or hybrid of a listed species and includes any part, egg, or nest of such bird (50 CFR 10.12). Migratory birds are not necessarily federally listed endangered or threatened birds under the ESA. The MBTA, which is enforced by USFWS, makes it unlawful "by any means or in any manner, to

pursue, hunt, take, capture, [or] kill" any migratory bird, or attempt such actions, except as permitted by regulation. The applicable regulations prohibit the take, possession, import, export, transport, sale, purchase, barter, or offering of these activities, except under a valid permit or as permitted in the implementing regulations (50 CFR 21.11).

Clean Water Act, 1972. The CWA provides a structure for regulating discharges into the waters of the U.S. Through this Act, the Environmental Protection Agency (EPA) is given the authority to implement pollution control programs. These include setting wastewater standards for industry and water quality standards for contaminants in surface waters. The discharge of any pollutant from a point source into navigable waters is illegal unless a permit under its provisions is acquired. In California, the SWRCB and the nine RWQCB are responsible for implementing the CWA.

2.1.2. Applicable State Regulations

California Environmental Quality Act. CEQA provides guidelines for defining impacts. Appendix G of the guidelines contains questions that local jurisdictions should evaluate when analyzing a project's potential impacts. CEQA provides these guidelines so that local jurisdictions are able to determine what constitutes an "adverse effect" and significant impact to a biological resource.

California Endangered Species Act. Similar to the Federal ESA, the California ESA provides protection to species considered threatened or endangered by the State of California. The California ESA recognizes the importance of threatened and endangered fish, wildlife, and plant species and their habitats, and prohibits the taking of any endangered, threatened, or rare plant and/or animal species unless specifically permitted for education or management purposes.

California Fish and Game Code, Section 1600. Under Section 1602 of the Fish and Game Code, CDFG regulates activities that would divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. CDFG has jurisdiction over riparian habitats (e.g., southern willow scrub) associated with watercourses. Jurisdictional waters are delineated by the outer edge of riparian vegetation or at the top of the bank of streams or lakes, whichever is wider. CDFG jurisdiction does not include tidal areas or isolated resources.

Porter-Cologne Water Quality Act. The Act provides for statewide coordination of water quality regulations. The California State Water Resources Control Board was

established as the statewide authority, and nine separate RWQCB were developed to oversee water quality on a day-to-day basis.

2.2. Studies Required

This report was prepared to provide information needed for the project to comply with state and federal environmental laws and regulations. Some of the applicable laws and regulations include the federal Endangered Species Act of 1973, Section 404 of the Clean Water Act (CWA), the California Environmental Quality Act (CEQA), Section 401 of the CWA, Porter-Cologne Water Quality Control Act, and Sections 1601–1603 of the Fish and Game Code.

A general biological study focusing on sensitive species was required for this project. A wetland delineation was required to identify the wetland and non-wetland jurisdictional areas adjacent to the creek. The California Natural Diversity Database (CNDDB) records and a U.S. Fish and Wildlife Service (USFWS) species list (2003; Appendix A) for this area were reviewed to determine the potential for sensitive species to occur on-site. Studies and surveys required to identify natural resources in the project area were identified through coordination with the Department. Focused surveys for arroyo toad were conducted following correspondence with USFWS and the Department.

2.2.1. Biological Resources Survey

Vegetation communities were mapped within the PIA and within 200 feet of the PIA (study area) on a one inch equals 200 feet aerial photograph (Figure 3). All plant species observed on-site were noted, and plants that could not be identified in the field were identified later using taxonomic keys.

Animal species observed directly or detected from calls, tracks, scat, nests, or other sign were noted. The bridge was searched for signs of wildlife using it for nesting or roosting.

Floral nomenclature for common plants follows Hickman (1993) and vegetation communities follow Oberbauer (2005). Zoological nomenclature for birds is in accordance with the American Ornithologists' Union Checklist (1998); for butterflies, Mattoni (1990) and Opler and Wright (1999); for mammals, Jones et al. (1997); and for amphibians and reptiles, Crother (2001). Assessments of the sensitivity of species and habitats are based primarily on CNPS (2001), State of California (2008a, 2008b, 2009a, 2009b), U.S. Fish and Wildlife Service (2002), and Holland (1986).

Image source: Copyright 2008 GlobeXplorer, All Rights Reserved (flown Jan 2008)

Study Area

FIGURE 3

Aerial Photograph of Lawson Valley Road Bridge Project

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Sensitive plant and wildlife species analysis for the project site was based upon potential sensitive species identified by the CNDDB (2005) and USFWS (2003; see Appendix A).

2.2.2. Focused Surveys for Arroyo Toad

RECON biologists conducted focused surveys for arroyo toad according to the survey protocol prepared by USFWS (1999a). The surveys were conducted approximately 600 feet upstream and downstream of Lawson Valley Bridge. Daytime surveys were conducted by walking slowly through the project site while visually searching for arroyo toad eggs, larvae, and juveniles. Daytime surveys were conducted in the late afternoon prior to dusk. Nighttime surveys were conducted by walking slowly throughout the site between one hour after dusk and 12:00 A.M. Surveyors stopped periodically, remained silent for approximately 15 minutes, and listened for arroyo toad calls. Flashlights were used periodically in an attempt to detect adult arroyo toads through eye shine.

2.2.3. Wetland Delineation

A routine wetland delineation, following the guidelines set forth by the ACOE (1987, 2006), was performed in 2008 to gather field data at potential jurisdictional wetland sites in the study area. The Project study area for the wetland delineation consists of the 1.19-acre PIA and a 200-foot buffer around the PIA (see Figure 3). The 2008 wetland delineation report has been integrated into this NES report.

Prior to conducting the delineation, previously prepared wetland delineations for the study area (HDR 2002, RECON 2003, and RECON 2005), historical aerial photographs, and USGS topographic maps of the site were examined. Once on-site, the potential jurisdictional areas were surveyed to determine the presence of any jurisdictional wetlands. The remainder of the study area was also examined in the field for the presence of potential waters of the U.S. and state.

2.2.3.1. DELINEATION METHODS

Wetlands are delineated using three parameters: hydrophytic vegetation, wetland hydrology, and hydric soils. According to ACOE, indicators for all three parameters must be present to qualify as a wetland.

Hydrophytic Vegetation

Hydrophytic vegetation is defined as “the sum total of macrophytic plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content” (ACOE 1987). The potential wetland areas were surveyed by

walking throughout the site and making observations of those areas exhibiting characteristics of jurisdictional waters or wetlands. Vegetation units with the potential to be wetlands were examined, and data for each vegetation stratum (i.e., tree, shrub, herb, and vine) were recorded on the datasheet provided in the Arid Supplement (ACOE 2006). The percent absolute cover of each species present was visually estimated and recorded.

The wetland indicator status of each species recorded was determined by using the List of Wetland Plants of San Diego provided by ACOE (2008) and regional indicator status definitions from the USFWS (1997). An obligate (OBL) indicator status refers to plants that have a 99 percent probability of occurring in wetlands under natural conditions. A facultative wet (FACW) indicator status refers to plants that occur in wetlands (67-99 percent probability), but are occasionally found in non-wetlands. A facultative (FAC) indicator status refers to plants that are equally likely to occur in wetlands or non-wetlands (estimated probability 34–66 percent). Facultative upland (FACU) species are more often found in upland sites. Upland (UPL) species have a high probability to occur in upland sites. A no indicator (NI) status refers to species that have insufficient data available to determine the status for the local region. A no agreement (NA) indicator status signifies that the regional panel was not able to reach a unanimous decision on this species.

Plant species nomenclature follows Hickman (1993). Dominant species with an indicator status of NI or not listed in the USFWS 1997 list were evaluated as either wetland or upland indicator species based on local professional knowledge of where the species is most often observed in habitats characteristic in southern California.

There are three indicators or tests to determine hydrophytic vegetation on a site: the dominance test, prevalence index, and morphological adaptations. The 50/20 rule is a repeatable and objective procedure for selecting dominant plant species and is recommended when data are available for all species in the community (ACOE 2006). Dominant species are those plants that individually or collectively contribute more than 50 percent of the total vegetative cover within each vegetation stratum plus those species that, by themselves, comprise 20 percent or more of the total cover within each vegetation stratum.

If the vegetation at a particular site passes the dominance test (using the 50/20 rule), the hydrophytic vegetation criterion is considered fulfilled. If it fails the dominance test, and positive indicators of hydric soils and/or wetland hydrology are present, it is necessary to apply the prevalence index. The prevalence index is a weighted-average wetland

indicator status of all plant species at a test site, where each indicator status category is given a numeric code and weighed by percent cover (ACOE 2006). If a prevalence index is 3.0 or less, the hydrophytic vegetation criterion is considered fulfilled.

If a site fails the prevalence index and positive indicators of hydric soils and/or wetland hydrology are present, it is necessary to assess the presence or absence of morphological adaptations. To apply this indicator, morphological features must be observed on more than 50 percent of the individuals of a FACU species living in an area where indicators of hydric soil and wetland hydrology are present (ACOE 2006). Once this indicator is applied, the dominance test and/or the prevalence index are/is recalculated using a FAC indicator status of this species (ACOE 2006).

Hydric Soils

A hydric soil is a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation (ACOE 1987). Hydric soil indicators are formed predominantly by the accumulation or loss of iron, manganese, sulfur, or carbon compounds (ACOE 2006). The hydric soil criterion is considered fulfilled at a location if soils in the area can be inferred to have a high groundwater table, evidence of prolonged soil saturation, or any indicators suggesting a long-term reducing environment in the upper 18 inches of the soil profile.

Sample points were selected within potential wetland areas and where the apparent boundary between wetland and upland was inferred based on changes in the composition of the vegetation and topography. Soil pits were dug to a depth of at least 18 inches or to a depth necessary to determine soil color, evidence of soil saturation, depth to groundwater, and indicators of a reducing soil environment (e.g., mottling, gleying, and sulfidic odor).

Hydric soil indicators are presented in three groups in the Arid Supplement (ACOE 2006): “all soils,” “sandy soils,” and “loamy and clayey soils.” Indicators applicable to all soil textures are indicated as A1 through A10 on the datasheet, which include histosols, histic epipedon, stratified layers, and muck. Indicators in sandy soils are noted as S1 through S6, which include sandy gleyed matrix, sandy redox, and stripped matrix. F1 (loamy mucky mineral) through F9 (vernal pools) are indicators of hydric conditions within loamy and clayey soils. A complete description of each of the hydric soil indicators is provided in the 2006 Arid Supplement.

Wetland Hydrology

The presence of wetland hydrology indicators confirm that inundation or saturation has occurred on a site, but may not provide information about the timing, duration, or frequency of the event. Hydrology features are generally the most ephemeral of the three wetland parameters (ACOE 2006).

In the 2006 Arid Supplement, wetland hydrology indicators are divided into four groups. Those that are determined based on direct observation are in Group A. These include the presence of surface water, a high water table, and saturation. Water marks, drift deposits, surface soil cracks, and other indicators of flooding or ponding fall within Group B. Group C consists of indicators that provide indirect evidence that a site was saturated recently, such as the presence of sulfidic odors or oxidized rhizoshperes along living roots. Finally, Group D consists of vegetation and soil features that indicate recent wet conditions, such as the FAC-neutral test or a shallow aquitard (ACOE 2006). These indicators are further classified as primary or secondary indicators.

Hydrologic information for the site was obtained by reviewing USGS topographic maps and by directly observing hydrology indicators in the field. The wetland hydrology criterion is considered fulfilled at a location if it has a high probability of being periodically inundated or it has soils saturated to the surface for a sufficient period during the growing season to develop anaerobic conditions in the surface soil environment, especially the root zone (ACOE 1987). If at least one primary indicator or at least two secondary indicators are found at a sample point, the wetland hydrology criterion is considered fulfilled.

Wetlands

As stated in the federal regulations for the CWA, wetlands are defined as

> those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions (EPA, 40 CFR 230.3 and CE, 33 CFR 328.3).

The definition of a wetland includes the phrase “under normal circumstances,” because there are situations in which the vegetation of a wetland has been removed or altered as a result of recent natural events or human activities (ACOE 1987).

To describe these altered conditions, ACOE included definitions for atypical situations and problem areas (1987).

> *Atypical situation* refers to areas in which one or more parameters (vegetation, soil, and/or hydrology) have been sufficiently altered by recent human activities or natural events to preclude the presence of wetland indicators of the parameter.
>
> *Problem areas* are wetland types in which wetland indicators of one or more parameters may be periodically lacking due to normal seasonal or annual variations in environmental conditions that result from causes other than human activities or catastrophic natural events. Representative examples of problem areas include seasonal wetlands, wetlands on drumlins, prairie potholes, and vegetated flats.

Atypical situations and problem areas may lack one or more of the three criteria and still be considered wetlands. Background information on the previous condition and field observations would need to indicate that the missing wetland criteria were present before the disturbance and would otherwise occur at the site under normal circumstances. Additional delineation procedures would be employed if normal circumstances did not occur on a site.

Non-Wetland Waters

The ACOE also requires the delineation of non-wetland waters. These waters must have strong hydrology indicators such as the presence of seasonal flows and an ordinary high watermark. An ordinary high watermark is defined as

> . . . that line on the shore established by the fluctuations of water and indicated by physical characteristics such as [a] clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (33 CFR Part 328.3).

Areas delineated as non-wetland jurisdictional waters may lack wetland vegetation or hydric soil characteristics. Hydric soil indicators may be missing because topographic position precludes ponding and subsequent development of hydric soils. Absence of wetland vegetation can result from frequent scouring due to rapid water flow. These types

of jurisdictional waters are delineated by the lateral and upstream/downstream extent of the ordinary high watermark of the particular drainage or depression.

2.2.3.2. REGULATORY JURISDICTION

ACOE Jurisdiction (Waters of the U.S.)

ACOE, through the authority of Section 404 of the CWA and Section 10 of the Rivers and Harbors Act, is the primary agency involved in wetland regulation. The U.S. EPA has the authority to veto any decision by the ACOE on permit issuance, as the EPA has the final authority over enforcement of wetland regulations.

In accordance with Section 404 of the CWA, ACOE regulates the discharge of dredged and/or fill material into waters of the United States. The term "waters of the United States" is defined as [33 CFR Part 328.3(a)]:

- All waters currently used, or used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands;
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect foreign commerce including any such waters: 1) which could be used by interstate or foreign travelers for recreational or other purposes; or 2) from which fish or shell fish are or could be taken and sold in interstate or foreign commerce; or 3) which are used or could be used for industries in interstate commerce;
- All other impoundments of waters otherwise defined as waters of the U.S. under the definition;
- Tributaries of waters identified above;
- The territorial seas;
- Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in the paragraphs above. Adjacent wetlands are defined as

  > . . . wetlands that are bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes, and the like are "adjacent wetlands"[40 CFR Part 230.3 (b)].

The limits of ACOE regulation over tidal waters of the U.S. extend to the high tide line. The high tide line is the intersection of the land with the water's surface at the maximum

height reached by a rising tide, not including storm surges which exceed the normal or predicted reach of the tide (Wetland Training Institute 2001).

California Department of Fish and Game (CDFG) Jurisdiction (Waters of the State)

Under sections 1600–1607 of CDFG Code (Streambed Alteration), CDFG regulates activities that would divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. CDFG takes jurisdiction to the bank of the stream or lake if un-vegetated, or to the limits of adjacent riparian vegetation (e.g., coast live oak riparian forest) associated with watercourses if vegetated. Jurisdictional waters are delineated by the outer edge of riparian vegetation or at the top of the bank of streams or lakes, whichever is wider. CDFG may take jurisdiction over isolated wetlands and streambeds (waters of the State) in cases where ACOE may not.

Regional Water Quality Control Board (RWQCB) Jurisdiction

RWQCB is the regional agency responsible for protecting water quality in California. The jurisdiction of this agency includes all waters of the U.S. and waters of the state as mandated by both Section 401 of the federal CWA and the California Porter-Cologne Water Quality Control Act. Section 401 of the CWA specifies that certification from the State is required for any applicant requesting a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities that may result in any discharge into navigable waters. The Porter-Cologne Act requires any applicant discharging waste, or proposing to discharge waste, within any region that could affect the waters of the state to file an application for waste discharge requirements (WDRs). Discharge of fill material into waters of the State, which does not fall under the jurisdiction of the ACOE, may still require authorization through application for WDRs.

2.3. Personnel and Survey Dates

Surveys conducted within the Project Study Area included general biological surveys, wetland delineations, and focused arroyo toad surveys. General biological surveys were conducted in 2003, 2004, and 2005, and the vegetation mapping was updated in 2008. A wetland delineation was conducted by RECON in 2003 and updated in 2005 and 2008. Focused surveys for the federally listed endangered arroyo toad were conducted in 2006 and 2008. Between April 20, 2006 and June 22, 2006, RECON biologists conducted six surveys (RECON 2006), and between April 10, 2008 and June 26, 2008, RECON

biologists conducted six surveys (RECON 2008). Table 1 lists the survey dates, personnel, times, and weather conditions for the above listed surveys.

TABLE 1
SURVEY DATES, PERSONNEL, TIMES, AND WEATHER CONDITIONS FOR SURVEYS CONDUCTED IN THE LAWSON VALLEY ROAD BRIDGE PROJECT STUDY AREA

Date	Survey Type	Surveyor(s)	Time and Weather Conditions
06/11/2003	General biological survey and wetland delineation	Diana Saucedo-Ortiz Fred Edwards	9:30 A.M. - 12:30 P.M.; 63-67ºF; 0-4 mph; 75-100% cloud cover.
05/25/2004	Spring general biological survey	Diana Saucedo-Ortiz	9:30 A.M. - 12:30 P.M.; 62-68ºF; 0-3 mph; 40-100% cloud cover.
06/13/2005	General biological survey and wetland delineation	Diana Saucedo-Ortiz Amy Clark	9:30 A.M. - 11:30 P.M.; 68-75ºF; 0-3 mph; 0% cloud cover.
04/20/2006-06/22/2006	Focused arroyo toad surveys	Diana Saucedo-Ortiz Cheri Bouchér Matt Guilliams	Daytime surveys: 4:30 P.M. - 7:45 P.M.; 57-79ºF; 0-5 mph; 0-100% cloud cover. Nighttime surveys: one hour after dusk – 10:15 P.M.; minimum of 55ºF at dusk; 0-5 mph; 0-100% cloud cover.
04/10/2008-06/26/2008	Focused arroyo toad surveys	Alex Fromer Beth Proscal Diana Saucedo-Ortiz Jillian Bates	Daytime surveys: 4:30 P.M. - 7:45 P.M.; 57-79ºF; 0-5 mph; 0-100% cloud cover. Nighttime surveys: one hour after dusk – 10:15 P.M.; minimum of 55ºF at dusk; 0-5 mph; 0-100% cloud cover.
12/30/2008	Vegetation mapping and wetland delineation	Jillian Bates Erin McKinney	11:30 A.M. - 3:30 P.M.; 65-80; 0 mph; 0% cloud cover.

ºF = degrees Fahrenheit; mph = miles per hour; % = percent.

2.4. Agency Coordination and Professional Contacts

To assist in evaluating potential project effects on federally listed plant and wildlife species, a request for a candidate, proposed, threatened, or endangered species list for the proposed project area was submitted to USFWS in May 2003. Peter Sorensen with USFWS provided a list of species that occur in the general project area on June 11, 2003 (see Appendix A).

2.5. Limitations That May Influence Results

Limitations to the compilation of a comprehensive floral and wildlife checklist were imposed by seasonal factors. General biological surveys were conducted after the blooming period and emergence of some early spring annual species.In addition, bird

species that are present in the region only during certain times of the year, such as wintering species, may not have been present during the May and June surveys.

Arroyo toad surveys were conducted within the protocol requirements provided by USFWS (1999a).

2.6. Literature Review

Previous documentation regarding the study area was reviewed prior to the site visits. Literature reviewed includes the following documents, some of which are included in the appendices as specified below:

- Biological Survey and Wetland Delineation Technical Report, Lawson Valley Road Bridge Emergency Repair Project, San Diego, California (HDR 2002; Appendix D);
- Arroyo Toad Habitat Assessment: Lawson Valley Bridge (Varanus 2002; Appendix E);
- Willow Flycatcher Habitat Assessment: Lawson Valley Bridge (Varanus 2003; see Appendix F);
- Request for Candidate, Proposed, Threatened, or Endangered Species List for the Proposed Lawson Valley Road Bridge Project, San Diego County, California (USFWS 2003; see Appendix A);
- Draft Biological Technical and Wetland Delineation Report for the Lawson Valley Road Bridge Replacement, San Diego County, California (RECON 2003);
- Draft Natural Environment Study for the Lawson Valley Road Bridge Replacement, San Diego County, California (RECON 2005);
- Focused Survey Results for the Arroyo Toad on the Lawson Valley Bridge Replacement Project Site, San Diego County (RECON 2006); and
- Focused Survey Results for the Arroyo Toad on the Lawson Valley Bridge Replacement Project Site, San Diego County (RECON 2008).

Chapter 3. Results: Environmental Setting

3.1. Description of the Existing Biological and Physical Conditions

3.1.1. Study Area

The study area evaluated in the general biological surveys, arroyo toad surveys, and wetland delineation consists of an existing public road and bridge and the adjacent private property within rural residential development. The study area includes the 1.19-acre PIA and a 200-foot buffer around the PIA to account for the maximum potential Wetland Buffer area as outlined in the County of San Diego Biological Resource Mapping Guidelines and to be consistent with mapping guidelines provided by the Department (California Department of Transportation 2000; see Figure 3). This study area is considered to be sufficient based on the surrounding land uses (i.e., disturbed/developed) and the components of the proposed project (i.e., the replacement of an existing bridge).

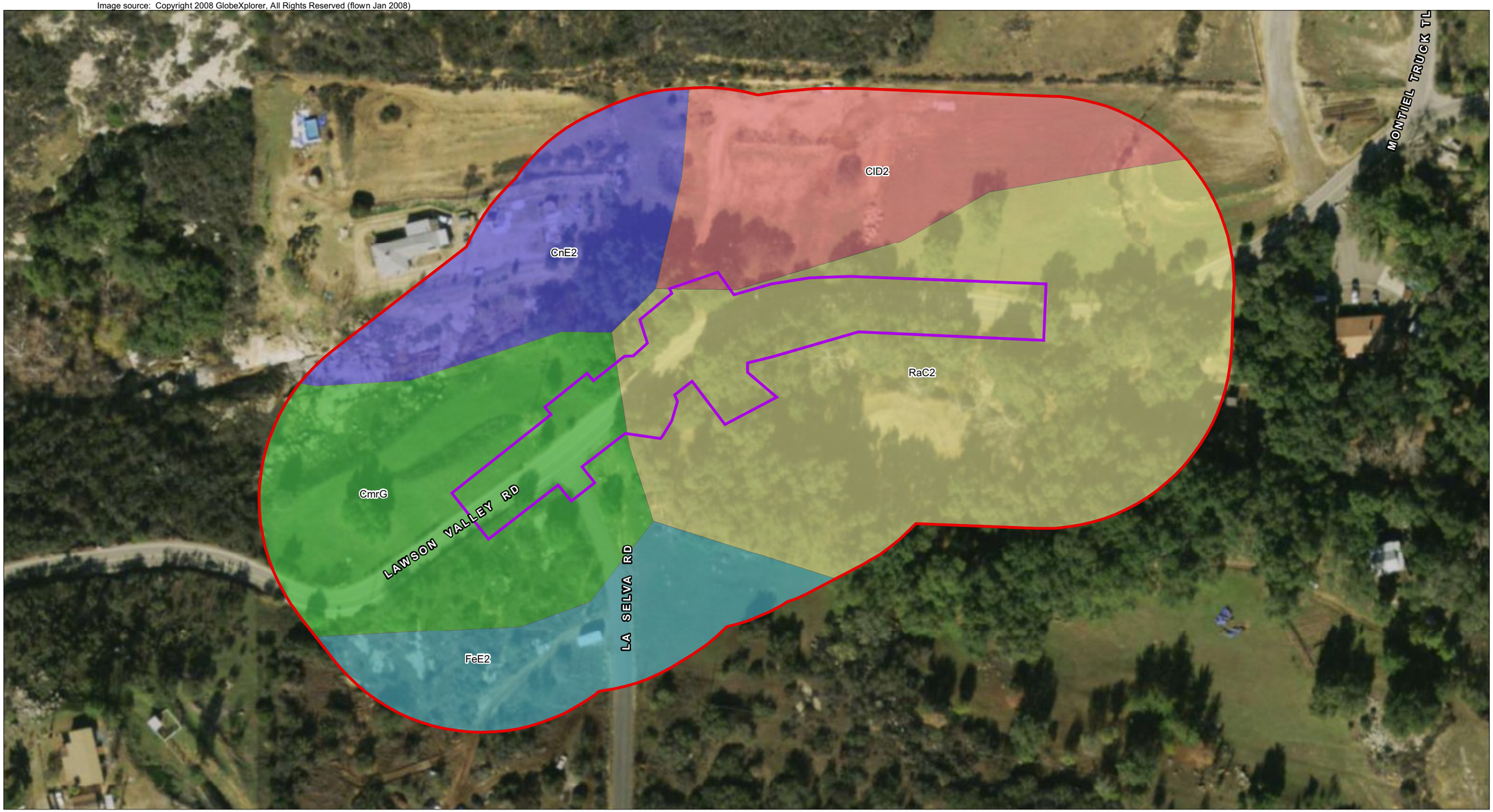
3.1.2. Physical Conditions

The study area is located at approximately 1,744 feet above mean sea level. Lawson Valley Creek, a USGS blue-line stream, flows northwest under the bridge toward the Sweetwater River (see Figure 2). Rock outcrops are present along the banks of the creek and under the bridge.

The U.S. Department of Agriculture Soil Survey for San Diego County has identified three soil series: Cieneba, Fallbrook, and Ramona, within the study area (USDA; 1975). Soil types mapped within the study area are described below and illustrated in Figure 4.

Three soil types associated with the Cieneba series occur within the study area: Cieneba coarse sandy loam, 5 to15 percent slopes, eroded; Cieneba very rocky coarse sandy loam, 30 to 75 percent slopes; and Cieneba-Fallbrook rocky sandy loam, 9 to 30 percent slopes, eroded. These associations occur within the north half and western portions of the study area. Cieneba soils are shallow, excessively drained sandy loam similar to its decomposed granitic parent rock; they are characterized by rock outcrops or boulders that comprise 50 percent of the soil surface. The Cieneba soil is brown (dark brown 10 YR 3/2, moist) coarse sandy loam about 10 inches over weathered granitic rock. The soil is

Image source: Copyright 2008 GlobeXplorer, All Rights Reserved (flown Jan 2008)



Study Area

Project Impact Area

Soils Calssification

- ClD2, Cieneba Coarse Sandy Loam, 5 to 15 Percent Slopes, Eroded
- CmrG, Cieneba Very Rocky Coarse Sandy Loam, 30 to 75 Percent Slopes
- CnE2, Cieneba-Fallbrook Rocky Sandy Loams, 9 to 30 Percent Slopes, Eroded
- FeE2, Fallbrook Rocky Sandy Loam, 9 to 30 Percent Slopes, Eroded
- RaC2, Ramona Sandy Loam, 5 to 9 Percent Slopes, Eroded

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FIGURE 4
Soil Types within the Lawson Valley Road Bridge Project Study Area

well to excessively drained, moderate to moderately rapidly permeable, and has rapid to very rapid runoff (USDA 1973).

Fallbrook rocky sandy loam, 5 to 9 percent slopes, eroded, is present in a small patch at the southwest portion of the study area. Fallbrook soils form from granodiorite parent material, which have weathered in place, and are characterized by rock outcrops and boulders that can cover from 20 to 45 percent of the soil surface. The topsoil layer, about six inches thick, is brown (dark brown, 10 YR 3/3 moist), and the subsoil is reddish brown (dark reddish brown, 5 YR 3/4 to 4/4) when moist. The soil is well drained, moderately permeable, and has medium to rapid runoff (USDA 1973).

Ramona sandy loam, 5 to 9 percent slopes, eroded, comprises nearly one third of the study area and is present within the project footprint and southeast of Lawson Valley Road east of La Selva Road. Ramona soils are found on alluvial fans and terraces and are formed from alluvium derived from granitic parent material. The topsoil layer, about 12 inches thick, is yellowish-brown (dark brown, 10 YR 3/3, moist), and the subsoil is brown (dark brown, 10 YR 3/3, moist). The soil is well drained, moderately slowly permeable, and has slow to medium runoff (USDA 1973).

3.1.3. Biological Conditions in the Study Area

3.1.3.1. VEGETATION COMMUNITIES

Four vegetation communities are located in the PIA: coast live oak riparian forest, southern willow scrub, southern mixed chaparral, and non-native grassland. Coast live oak riparian forest, southern willow scrub, freshwater marsh, coastal sage scrub, southern mixed chaparral, and non-native grassland occur in the study area within the 200-foot project buffer. Bare ground and developed land also occur in the PIA and 200-foot buffer. Vegetation communities that occur within the study area are summarized in Table 2, illustrated in Figure 5, and described below. The County-modified Holland (1986) vegetation community codes are provided in parentheses.

A total of 68 plant species were identified in the study area (Appendix B). Of this total, 43 (63 percent) are species native to southern California and 25 (37 percent) are introduced species.

Image source: Copyright 2008 GlobeXplorer, All Rights Reserved (flown Jan 2008)

Study Area

Sesitive Species Sitings (RECON 2005)

- Western Bluebird
- Red-tailed Hawk Nest
- San Diego Sagewort

Vegetation Type and Land Cover

- Coastal Sage Scrub
- Coast Live Oak Riparian Forest
- Non-native Grassland
- Southern Mixed Chaparral
- Southern Willow Scrub
- Freshwater Marsh
- Bare Ground
- Developed

0 Feet 100

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FIGURE 5
Vegetation Communities and Sensitive Species within the Lawson Valley Road Bridge Project Study Area

TABLE 2
VEGETATION COMMUNITIES AND LAND COVER TYPES WITHIN THE PROJECT STUDY AREA AND PIA
(acres)

Vegetation Communities/ Land Cover Types[1]	Study area	PIA
Coast live oak riparian forest (61310)	3.22	0.50
Southern willow scrub (63320)	0.23	0.04
Freshwater marsh (52410)	0.08	-
Coastal sage scrub (32500)	0.31	-
Southern mixed chaparral (37120)	1.23	0.02
Non-native grassland (42200)	4.22	0.16
Bare ground (13000)	0.01	0.01
Developed land (12000)	1.93	0.46
TOTAL	11.23	1.19

[1]According to Holland (1986) and Oberbauer (2005).

Coast Live Oak Riparian Forest (61310)

Coast live oak riparian forest is a stream or lake associated community dominated by open to locally dense stands of coast live oak. It is found above the willow riparian zone within canyons, bottomlands and outer floodplains (Holland 1986).

Coast live oak riparian forest vegetation, totaling approximately 0.50 acre within the PIA, dominates the central portion of the study area along Lawson Valley Creek (see Figure 5). The coast live oak canopy cover is dense, with 85 to 90 percent canopy cover (Photograph 3). Plant species found within the understory include wild grape (*Vitis girdiana*), climbing penstemon (*Keckiella cordifolia*), creeping snowberry (*Symphoricarpos mollis*), California rose (*Rosa californica*), and non-native species such as wild oat (*Avena fatua*) and crabgrass (*Digitaria sanguinalis*).

Southern Willow Scrub (63320)

Southern willow scrub is a dense riparian community dominated by broad-leafed, winter-deciduous willow trees (*Salix* spp.). This vegetation community is typically found along major drainages but also occurs in smaller drainages. The density of the willows typically prevents a dense understory of smaller plants from growing. The representative species typically grows in loose, sandy, or fine gravelly alluvium deposited near stream channels during flood flows. This community requires repeated flooding to prevent succession to community dominated by sycamores and/or cottonwoods (Holland 1986).

Southern willow scrub, totaling 0.04 acre within the PIA, occurs along the streambed of Lawson Creek within the eastern portion of the study area (see Figure 5). Willow trees (spp.) form a continuous canopy with the adjacent coast live oak riparian forest

PHOTOGRAPH 3
Coast Live Oak Riparian Forest and Creek, Upstream From Bridge, Facing East (2008)

PHOTOGRAPH 4
Southern Willow Scrub, Downstream from Bridge, Facing West (2008)

(Photograph 4). Dominant native tree species include arroyo willow (*Salix lasiolepis*) with scattered emergent California sycamore (*Platanus racemosa*). An herbaceous understory is also present and dominated by mule fat (*Baccharis salicifolia*), western ragweed (*Ambrosia psilostachya*), panicled bulrush (*Scirpus microcarpus*), and western white clematis (*Clematis ligusticifolia*).

Freshwater Marsh (52410)

Freshwater marsh communities are comprised of perennial emergent monocots typically forming a closed canopy. This habitat occurs in open bodies of fresh water with little current flow, such as ponds, and to a lesser extent around seeps and springs. Freshwater marshes occur in areas of permanent inundation by freshwater without active stream flow. Freshwater marsh communities, as with all wetland habitats, have been greatly reduced throughout their entire range and continue to decline as a result of urbanization and are considered sensitive by state and federal resource agencies.

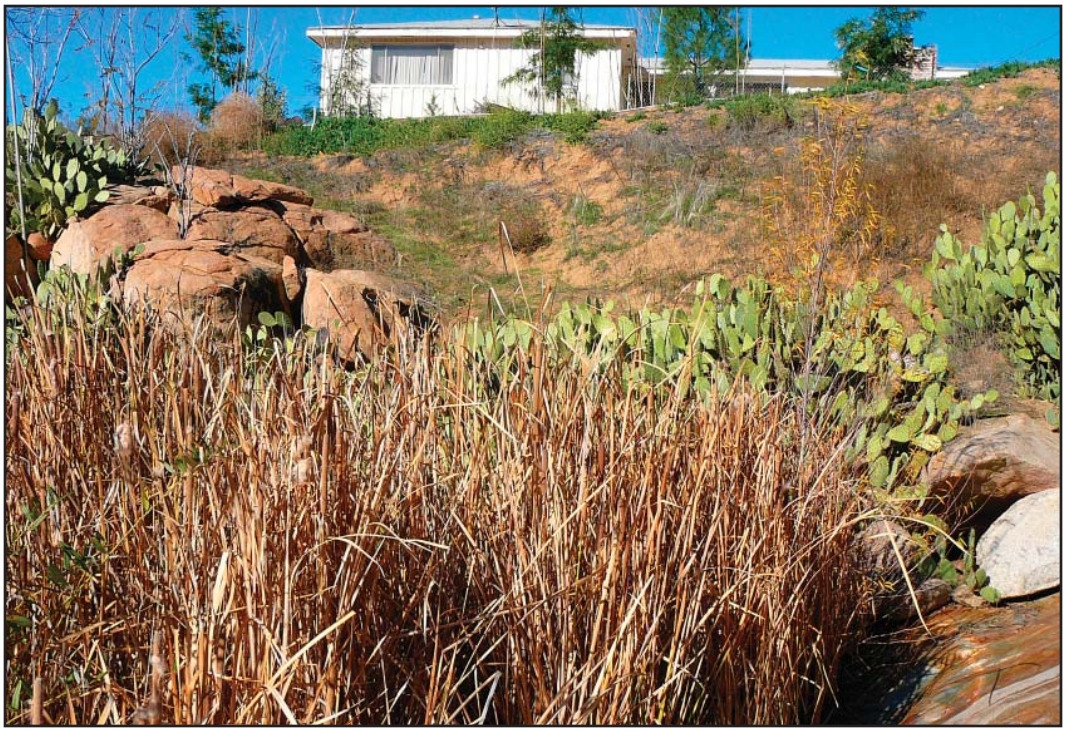
Freshwater marsh occurs outside the PIA within the streambed approximately 50 feet downstream of the Lawson Valley Bridge (Photograph 5; see Figure 5). The freshwater marsh is canopied by arroyo willow and California sycamore along the banks. The streambed is densely vegetated with broadleaf cattail (*Typha latifolia*), water mudwort (*Limosella aquatica*), and panicled bulrush. The rocky outcrops bear sparse growths of annual rabbitsfoot grass *(Polypogon monspeliensis*) and mule fat, as well as weedy species such as asthmaweed (*Conyza bonariensis*).

Coastal Sage Scrub (32500)

Coastal sage scrub is a vegetation community comprised of low-growing, aromatic, drought-deciduous soft-woody shrubs that have an average height of approximately three to four feet. The plant community is typically dominated by facultatively drought deciduous species such as California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma laurina*), and white sage (*Salvia apiana*). The community typically is found on low moisture-availability sites with steep, xeric slopes or clay rich soils that are slow to release stored water. These sites often include drier south- and west-facing slopes and occasionally north-facing slopes, where the community can act as a successional phase of chaparral development (Holland 1986)

Coastal sage scrub occurs outside the PIA among the rocky outcrops of the streambed, downstream of the Lawson Valley bridge (Photograph 6; see Figure 5). Prickly pear cacti (*Opuntia* sp.) dominate this vegetation community along with California sagebrush and California buckwheat.

PHOTOGRAPH 5
Freshwater Marsh Downstream from Bridge, Facing Southwest with Non-native Grassland to the South, Southern Willow Scrub to the North, and Southern Mixed Chaparral in the Far Background (2008)



PHOTOGRAPH 6
Freshwater Marsh and Coastal Sage Scrub, Downstream from Bridge, Facing North (2008)

Southern Mixed Chaparral (37120)

Southern mixed chaparral is a plant community typically dominated by broad-leaved sclerophyllous shrubs or small trees, and characteristically occupies protected north-facing and canyon slopes or ravines where more mesic conditions are present. Dominant shrubs in this community are typically 5 to 10 feet tall and may include manzanita (*Arcostaphylos* spp.), toyon (*Heteromeles arbutifolia*), ceanothus (*Ceanothus* spp.), mission manzanita (*Xylococcus bicolor*), and sugar bush (*Rhus ovata*). The vegetation is usually dense, with little or no understory cover, but may include patches of bare soil. This community typically is found in sites that are moister than those supporting chamise chaparral. Many species in this community are adapted to withstand repeated fires by their ability to stump sprout (Holland 1986).

Approximately 0.02 acre of southern mixed chaparral is found within the study area (see Photograph 5 and Figure 5). This habitat type is mapped west of La Selva Road in the southwestern portion of the study area. Dominant species present include California buckwheat and California scrub oak (*Quercus berberidifolia*).

Non-Native Grassland (42200)

Non-native grassland is an open habitat composed of introduced annual grasses that can have various native wildflowers present. Non-native grasslands occur throughout southern California (Holland 1986).

Approximately 0.16 acre of non-native grassland is found within the PIA (see Photograph 5). This habitat type is located along the north and south borders of the coast live oak riparian forest. Dominant species present include wild oat (*Avena fatua*), ripgut grass (*Bromus diandrus*), and foxtail chess (*Bromus madritensis* ssp. *rubens*).

Bare Ground (13000)

Approximately 0.01 acre of bare ground occurs within the PIA (see Figure 5). Bare ground consists of unvegetated areas within the streambed.

Developed Land (12000)

Lawson Valley Road, La Selva Drive, and the residential housing within the study area are mapped as developed land (see Figure 5). Bare ground occurs within the streambed beneath the existing bridge, which is mapped as developed land.

3.1.3.2. INVASIVE SPECIES

For purposes of this report, the term “invasive exotic plant” refers to all species that occur as *High* and *Moderate* on the California Invasive Plant Council’s (Cal-IPC) plant

inventory (Cal-IPC 2006). This inventory updates the 1999 *Exotic Pest Plants of Greatest Ecological Concern in California* plant inventory list. The Cal-IPC Invasive Plant Inventory identifies non-native plants that are serious problems in native ecosystems, including parks, reserves, wildlife areas, national forests, as well as working landscapes such as rangelands. The Cal-IPC list is based on information submitted by members and by land managers, botanists and researchers throughout California, and on published sources. The 2006 Cal-IPC list categorizes each plant species as: *high*, *moderate, limited,* and *evaluated but not listed* based on the negative ecological impact each plant has within California. The evaluation of each non-native plant is based on a criteria system. The criteria system for each plant assessment includes its: (1) ecological impact, (2) invasive potential, (3) distribution, and (4) documentation levels. A description of each rating, based on the criteria system, is presented below.

High: These species have severe ecological impacts on ecosystems, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. These species are usually widely distributed ecologically, both among and within ecosystems.

Moderate: These species have substantial and apparent—but generally not severe—ecological impacts on ecosystems, plant and animal communities, and vegetation structure. Their reproductive biology is conducive to moderate to high rates of dispersal, though establishment is generally dependent on ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited: The ecological impacts of these species are minor or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasion. Ecological amplitude and distribution are generally limited (these species may be locally persistent and problematic).

Evaluated but not listed: In general, this designation is for plant species that did not have enough information to warrant a rating or the information available indicated that the plant species does not currently have significant impacts within California.

Alert: This is an additional designation for some species in either the high or moderate category, but whose evaluation is limited. The designation alerts managers to species that are capable of rapidly invading unexploited ecosystems, based on initial localized observations and on observed ecological behavior in similar ecosystems elsewhere.

Invasive plant species identified on-site that occur on the 2006 Cal-IPC list are provided in Table 3 below.

TABLE 3
INVASIVE EXOTIC PLANT SPECIES IDENTIFIED IN THE PROJECT STUDY AREA

Common Name	*Scientific Name*	2006 Cal-IPC Rank
Wild oat	*Avena fatua*	Moderate
Black mustard	*Brassica nigra*	Moderate
Ripgut grass	*Bromus diandrus*	Moderate
Foxtail chess	*Bromus madritensis* ssp. *rubens*	High
Hottentot fig	*Carpobrotus edulis*	High
Brass-buttons	*Cotula coronopifolia*	Limited
White-stemmed filaree	*Erodium cicutarium*	Limited
Eucalyptus	*Eucalyptus* spp.	Limited - Moderate
Short-pod mustard	*Hirschfeldia incana*	Moderate
Smooth cat's ear	*Hypochaeris glabra*	Limited
Prickly lettuce	*Lactuca serriola*	Evaluated, not listed
Annual beard grass	*Polypogon monspeliensis*	Limited
Radish	*Raphanus sativus*	Limited
Russian thistle	*Salsola tragus*	Limited
Prickly sow thistle	*Sonchus asper*	Evaluated, not listed

3.1.3.3. ZOOLOGY

The wildlife species observed on-site are typical of riparian communities in San Diego County. The oak riparian and southern willow scrub habitat provides cover and foraging habitat for birds, amphibian, reptile, and mammal species.

A complete list of the wildlife species detected during 2003, 2004, 2006, and 2008 surveys is provided in Appendix C. Sensitive species observed or potentially occurring on-site are discussed in the Sensitive Biological Resources section of this report.

Butterflies

The distribution of butterflies is generally defined by the distribution of their larval food plants. Species common in coastal sage scrub and chaparral areas are expected to be the most common butterfly species on-site. The ridges on-site provide hill-topping areas, which some butterfly species use to search for mates.

Common butterfly species observed in the study area include cabbage white (*Pieris rapae*), common white (*Pieris protodice*), west coast lady (*Vanessa annabella*), and California sister (*Adelpha bredowii*).

Amphibians

Amphibians require moisture for at least a portion of their lifecycle, with many requiring a permanent water source for habitat and reproduction. Terrestrial amphibians have adapted to more arid conditions and are not completely dependent on a perennial or standing source of water. These species avoid desiccation by burrowing beneath the soil or leaf litter during the day and during the dry season.

Pacific treefrog (*Hyla regilla*) and California tree frog (Hyla californica) were observed as tadpoles and juveniles throughout the ponded areas in the creek within the PIA and study area (RECON 2006, 2008). Western toads (*Bufo boreas*) have not been observed within the PIA, but are known to occur adjacent to the study area (Varanus 2002).

Reptiles

The diversity and abundance of reptile species vary with habitat type. Many reptiles are restricted to certain vegetation communities and soil types, although some of these species will also forage in adjacent communities. Other species are ubiquitous, using a variety of vegetation types for foraging and shelter.

Western fence lizard (*Sceloporus occidentalis*), California striped racer (*Masticophis lateralis*), and San Diego gopher snake (*Pituophis catenifer*) were observed in the oak woodland and creek side vegetation during surveys.

Birds

The diversity of bird species varies with respect to the character, quality, and diversity of vegetation communities present. Riparian habitats typically have a high number of bird species because they provide protection and food, even throughout the dry summer months.

Bird species observed in the oak riparian habitat include bushtit (*Psaltriparus minimus minimus*), California towhee (*Pipilo crissalis*), Bewick's wren (*Thyromanes bewickii*), western scrub-jay (*Aphelocoma californica*), lesser goldfinch (*Carduelis psaltria hesperophilus*), and house finch (*Carpodacus mexicanus frontalis*). Other species observed include northern flicker (*Colaptes auratus*) and Nuttall's woodpecker (*Dendrocopos nuttallii*). No swallow nests were observed underneath the bridge. During the spring 2004 survey, house wrens (*Troglodytes aedon parkmanii*) were observed nesting in the crevices in the bridge and an Anna's hummingbird (*Calypte anna*) was observed nesting in thistle growing on the bank of the creek. House wrens were observed nesting in the bridge guardrails during 2005 surveys. A black phoebe (*Sayornis nigricans semiatra*) was also observed in the buttressing underneath the bridge. No Anna's

hummingbirds were observed nesting in the vicinity of the bridge in 2005. A pair of western bluebirds (*Sialia mexicana occidentalis*), were observed foraging in the non-native grasslands in 2003 and 2005. An active red-tailed hawk (*Buteo jamaicensis*) nest was observed within 100 feet of the PIA in 2003 and 2005 (see Figure 5).

Mammals

The oak riparian habitat on-site provides cover and foraging opportunities for a variety of mammal species. Bridges can provide roosting habitat for some species of bat. Most mammal species, such as rodents, are nocturnal and are difficult to detect during daytime surveys.

During surveys, signs of pocket gopher (*Thomomys umbrinus*) burrows were observed. Other species present include California ground squirrel (*Spermophilus beecheyi*) and cottontail rabbit (*Sylvilagus audubonii*). No evidence of bat roosting, such as guano, was observed underneath the bridge.

3.2. Regional Species and Habitats of Concern

For purposes of this report, species will be considered to be sensitive if they are (1) listed by state or federal agencies as threatened or endangered or are candidates or proposed for such listing; (2) on Lists 1B or 2 of the CNPS *Inventory of Rare and Endangered Plants of California* (CNPS 2001); or (3) listed as rare, endangered, or threatened in the CNDDB (State of California 2008a, 2008b, 2009a, 2009b. Noteworthy plant species are those that are on List 3 (more information about the plant's distribution and rarity needed) and List 4 (plants of limited distribution) of the CNPS *Inventory of Rare and Endangered Plants of California* (CNPS 2001). Sensitive habitat types are those identified by the CNDDB and Holland (1986). Assessments for the potential occurrence of sensitive or noteworthy species are based upon known ranges and habitat preferences for the species, species occurrence records from the CNDDB, and species occurrence records from other sites in the vicinity of the study area.

Raptors (birds of prey) and active raptor nests are protected by the CDFG Code 3503.5, which states that it is "unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird" unless authorized (1991).

3.2.1. Sensitive Vegetation Communities

Four sensitive vegetation communities were identified within the PIA: coast live oak riparian forest, southern willow scrub, southern mixed chaparral, and non-native

grassland. These communities are considered sensitive by the County of San Diego, CNDDB (State of California 2009c), and Holland (1986). Reasons for the sensitive status of these vegetation communities include restricted range, cumulative losses throughout the region, and a high number of endemic sensitive plant and wildlife species that occur in these vegetation communities.

3.2.1.1. COAST LIVE OAK RIPARIAN FOREST

Coast live oak riparian forest is considered sensitive by the County of San Diego, the State of California (2009c), CDFG, and RWQCB. Estimates of losses of riparian habitat in southern California range as high as 95 to 97 percent (Faber et al. 1989), predominantly due to habitat destruction and degradation from wetland conversion to agriculture, urban development, and flood control projects.

3.2.1.2. SOUTHERN WILLOW SCRUB

Southern willow scrub is considered sensitive by the County of San Diego, the State of California (2009c), ACOE, CDFG, and RWQCB. As stated above, riparian habitat in southern California has experienced losses as high as 95 to 97 percent (Faber et al. 1989) due to habitat destruction and degradation from wetland conversion to agriculture, urban development, and flood control projects.

3.2.1.3. SOUTHERN MIXED CHAPARRAL

Southern mixed chaparral is considered sensitive by the County of San Diego, as it provides habitat for raptors and other sensitive wildlife species.

3.2.1.4. NON-NATIVE GRASSLAND

Non-native grassland is considered sensitive by the County of San Diego, as it provides open space and foraging habitat for raptors and other wildlife.

3.2.2. Sensitive Plants

3.2.2.1. SENSITIVE PLANTS OBSERVED

One sensitive plant species, San Diego sagewort (*Artemisia palmeri*), was observed in the study area and is discussed below.

San Diego sagewort. San Diego sagewort is a CNPS List 4 species. It is found in San Diego County and northern Baja California, Mexico. In San Diego County, its distribution ranges from La Jolla south to Otay and east to Alpine (Beauchamp 1986). This perennial in the sunflower family (Asteraceae) grows as a series of long wand-like stems from the base and blooms from July to September. In coastal areas it occurs mostly near creeks and drainages; where it can occur in low numbers in dense riparian vegetation

and may be difficult to detect. Further inland it may occur in mesic chaparral vegetation that occurs on north-facing slopes (Reiser 2001).

One San Diego sagewort shrub was observed adjacent to and on the south side of the bridge during the surveys from 2003–2005 (see Figure 5). The shrub was not observed during 2008 surveys.

3.2.2.2. SENSITIVE PLANTS NOT OBSERVED

Table 4 lists plant species that could potentially occur on-site based on the ranges and habitat requirements of these species. One sensitive plant species, San Diego ambrosia (*Ambrosia pumila*), is discussed below.

San Diego ambrosia. San Diego ambrosia is federally listed as endangered and is a CNPS List 1B species. It is restricted to 15 occurrences at elevations below 1,400 feet (427 m) in western Riverside and San Diego counties (USFWS 2002). This perennial herb in the sunflower family (Asteraceae) primarily occurs on the upper terraces of rivers and drainages, as well as in open grasslands, openings in coastal sage scrub, and occasionally adjacent to vernal pools in clay soils (USFWS 2002). This plant is a clonal species that emerges from rhizomes in spring, is wind-pollinated, and flowers from May to September. Individual plants persist underground as herbaceous rhizome-like root systems. San Diego ambrosia is threatened with extirpation at its limited locations and by inbreeding due to low genetic diversity (USFWS 2002).

The study area is above the species' known elevational range. This species is not expected to occur in the study area given the limited distribution of the species. This species was not observed during surveys.

3.2.3. Sensitive Wildlife

3.2.3.1. SENSITIVE WILDLIFE OBSERVED

One sensitive wildlife species, Cooper's hawk *(Accipiter cooperii*), was observed in the study area and is discussed below.

Cooper's hawk. The Cooper's hawk's nesting sites are considered sensitive by CDFG. The Cooper's hawk ranges year-round throughout most of the United States; its wintering range extends south to Central America; and its breeding range extends north to southern

TABLE 4
SENSITIVE PLANT SPECIES WITH THE POTENTIAL
FOR OCCURRENCE ON THE LAWSON VALLEY BRIDGE REPLACEMENT SITE

Species	State/ Federal Status	CNPS List	Habitat/Blooming Period	Comments
Achnatherum diegoensis San Diego County needlegrass	–/–	4	Perennial herb; rocky soils, chaparral, coastal sage scrub, often near streams; blooms Feb.–June; elevation less than 2,300 feet.	Low potential to occur; was not observed during spring surveys.
Ambrosia pumila San Diego ambrosia	–/FE	1B	Perennial herb; chaparral, coastal sage scrub, valley and foothill grassland, creek beds, vernal pools, often in disturbed areas; blooms May–Sept.; elevation less than 1,400 feet. Many occurrences extirpated in San Diego County.	Low potential to occur given that PIA is above the species known elevation range. Species was not observed during surveys.
Artemisia palmeri San Diego sagewort	–/–	4	Deciduous shrub; coastal sage scrub, chaparral, riparian, mesic, sandy areas; blooms May–Sept.; elevation less than 3,000 feet.	A single shrub was observed adjacent to the bridge
Astragalus deanei Dean's milk-vetch	–/–	1B	Perennial herb; chaparral, coastal sage scrub, riparian, blooms Feb.–May, elevation 250–2,200 feet. Known from tributaries to Otay and Sweetwater rivers.	Low potential to occur; was not observed during spring surveys.
Brodiaea orcuttii Orcutt's brodiaea	–/–	1B	Perennial herb (bulbiferous); closed cone coniferous forest, chaparral, meadows and seeps, valley and foothill grassland, vernal pools, mesic, clay soil; blooms May–July; elevation less than 5,300 feet.	Low potential to occur given the lack of suitable habitat and substrate. Species was not observed during surveys.
Hemizonia (=*Deinandra*) *floribunda* Tecate tarplant	–/–	1B	Annual herb; chaparral, coastal sage scrub; blooms Aug.–Oct.; elevation less than 4,000 feet.	Low potential to occur given the lack of suitable habitat. Species was not observed during surveys.

TABLE 4
SENSITIVE PLANT SPECIES WITH THE POTENTIAL
FOR OCCURRENCE ON THE LAWSON VALLEY BRIDGE REPLACEMENT SITE
(continued)

Species	State/ Federal Status	CNPS List	Habitat/Blooming Period	Comments
Lathyrus splendens Pride-of-California	–/–	4	Perennial herb; chaparral; blooms April–June; elevation 600–5,000 feet.	Low potential to occur given the lack of suitable habitat. Species was not observed during surveys.
Quercus engelmannii Engelmann oak	–/–	4	Tree; cismontane and riparian woodland, valley and foothill grasslands, chaparral; blooms March–May; elevation 400–4,300 feet.	Not expected to occur and was not observed within PIA during surveys.
Scutellaria bolanderi ssp. *austromontana* Southern skullcap	–/–	1B	Perennial herb; chaparral, cismontane woodland, lower coniferous forest; blooms June–Aug.; elevation 2,000–6,500 feet.	Low potential to occur, PIA is below species elevational range. Species was not observed during surveys.

SPECIAL STATUS CODES

Federal Candidates and Listed Plants
FE = Federally listed, endangered

California Native Plant Society (CNPS) Lists
1B = Species rare, threatened, or endangered in California and elsewhere. These species are eligible for state listing.
4 = A watch list of species of limited distribution. These species need to be monitored for changes in the status of their populations.

Canada (Rosenfeld and Bielefeldt 1996). This species is a common breeder in both natural and urban environments, with eucalyptus trees used nearly as often as oak and willow riparian woodlands (Unitt 2004). Breeding occurs from March to July. This hawk forages primarily on medium-sized birds, but is also known to eat small mammals such as chipmunks and other rodents (Rosenfeld and Bielefeldt 1996). The decline of this species had been caused by urbanization and loss of habitat.

During the last 20 years, however, the Cooper's hawk has apparently acclimated to city living (Unitt 2004).

A Cooper's hawk was observed flying within the oak canopy in the PIA during the 2004, 2005, and 2008 surveys (see Figure 5). No nesting was observed; however, there is high potential for the nesting to occur within the study area given the presence of suitable nesting habitat.

3.2.3.2. SENSITIVE WILDLIFE NOT OBSERVED

Table 5 lists sensitive wildlife species with the potential to occur on-site; several of these species are described below.

Arroyo toad (Bufo californicus). The arroyo toad is federally listed as endangered and is a CDFG species of special concern. The arroyo toad ranges along the coast from San Luis Obispo County south into northwestern Baja California, Mexico, and from six drainages in the desert (Jennings and Hayes 1994). The arroyo toad is currently known to occur within 23 drainages in San Diego County. This species has very specific habitat requirements (Jennings and Hayes 1994). Primary constituent elements that include suitable foraging, sheltering, and breeding habitat for the arroyo toad within river and stream systems are summarized below (USFWS 2005):

- A hydrologic regime that supplies sufficient flowing water of suitable quality for breeding followed by complete metamorphosis (i.e. hatching from eggs into tadpoles and completed development of tadpoles into juvenile toads).
- Low gradient stream segments with shallow breeding pools for mating and egg laying with sandy or fine gravel beds where egg masses are deposited sand tadpoles develop and sparsely vegetated sand and gravel bars that are sufficiently wet, at least temporarily, for juvenile toads to forage and burrow.
- A natural flowing regime, which reworks sand and gravel bars, scours dense streamside vegetation, and deposits streamside sand bars and uplands terraces such that breeding pools, terraces and vegetation requirements are maintained for all

TABLE 5
SENSITIVE WILDLIFE SPECIES KNOWN OR
POTENTIALLY OCCURRING ON THE LAWSON VALLEY BRIDGE REPLACEMENT SITE

Species	Status	Habitat	Occurrence/Comments
Invertebrates			
Harbison's dun skipper *Euphyes vestris harbisoni*	*	Woodland meadows, bogs, grasslands. Host plant *Carex spissa.* Adult emergence late May–early July.	Low potential to occur given lack of suitable host plant in the wetland habitat in the study area.
Amphibians (Nomenclature from Collins 1997)			
Large-blotched ensatina *Ensatina eschscholtzii klauberi*	CSC	Forest and woodlands, oaks and mature chaparral in mountains of San Diego and Riverside counties.	Low potential to occur given the PIA is below the species known elevation range.
Arroyo toad *Bufo californicus*	FE, CSC	Open streamside sand/gravel flats. Quiet, shallow pools along stream edges are breeding habitat. Nocturnal except during breeding season (March–July).	Not expected to occur given the lack of required primary constituent elements.
California red-legged frog *Rana aurora draytonii*	FT, CSC	Slow-moving streams, ponds, etc., with dense vegetation cover providing shade over water surface.	Not expected to occur; it is believed to be extirpated from San Diego County.
Reptiles (Nomenclature from Collins 1997)			
Coronado skink *Eumeces skiltonianus interparietalis*	CSC	Grasslands, open woodlands and forest, broken chaparral. Rocky habitats near streams.	High potential to occur given the presence of suitable mature oak woodland habitat.
San Diego horned lizard *Phrynosoma coronatum blainvillii*	CSC, *	Chaparral, coastal sage scrub with fine, loose soil. Partially dependent on harvester ants for forage.	Moderate potential to occur in chaparral habitat habitat outside the PIA within the survey area.
Orange-throated whiptail *Aspidoscelis* [=*Cnemidophorus*] *hyperythrus beldingi*	CSC	Chaparral, coastal sage scrub with coarse sandy soils and scattered brush.	Moderate potential to occur in the chaparral habitat outside the PIA within the survey area.
Coastal western whiptail *Aspidoscelis* [=*Cnemidophorus*] *tigris multiscutatus*	*	Coastal sage scrub, chaparral, woodlands, and streamsides where plants are sparsely distributed.	High potential to occur given the presence of suitable woodland and streamside habitat.

TABLE 5
SENSITIVE WILDLIFE SPECIES KNOWN OR
POTENTIALLY OCCURRING ON THE LAWSON VALLEY BRIDGE REPLACEMENT SITE
(continued)

Species	Status	Habitat	Occurrence/Comments
Coastal rosy boa *Lichanura trivirgata roseofusca*	*	Coastal sage scrub, chaparral in inland and desert locales with rocky soils.	Low potential to occur given the lack of suitable coastal sage scrub or chaparral habitat within the PIA. Suitable chaparral habitat is present outside of the PIA.
San Diego ringneck snake *Diadophis punctatus similis*	*	Rocky areas in wet locales, such as swamps, damp forests, or riparian woodlands.	Moderate potential to occur given the presence of suitable riparian habitat and occasional rocky substrate.
Two-striped garter snake *Thamnophis hammondii*	CSC, *	Permanent freshwater streams with rocky bottoms. Mesic areas.	Moderate potential to occur given the presence of suitable riparian habitat and occasional rocky substrate.
Birds (Nomenclature from American Ornithologists' Union)			
Turkey vulture *Cathartes aura*	*	Dry, open county, woodlands, and farmlands.	Moderate potential to occur given the presence of suitable foraging habitat.
White-tailed kite (nesting) *Elanus leucurus*	CFP, *	Nest in riparian woodland, oaks, sycamores. Forage in open, grassy areas. Year-round resident.	Suitable nesting habitat present within PIA.
Sharp-shinned hawk (nesting) *Accipiter striatus*	*	Open deciduous woodlands, forests, edges, parks, residential areas. Migrant and winter visitor.	High potential to occur during winter given the presence of suitable foraging habitat.
Cooper's hawk *Accipiter cooperii*	*	Mature forest, open woodlands, wood edges, river groves. Parks and residential areas. Migrant and winter visitor.	Observed flying through the coast live oak riparian habitat during 2005 and 2008 surveys. Suitable nesting habitat present within PIA.

TABLE 5
SENSITIVE WILDLIFE SPECIES KNOWN OR
POTENTIALLY OCCURRING ON THE LAWSON VALLEY BRIDGE REPLACEMENT SITE
(continued)

Species	Status	Habitat	Occurrence/Comments
Golden eagle (nesting and wintering) *Aquila chrysaetos*	CFP, BEPA	Require vast foraging areas in grassland, broken chaparral, or sage scrub. Nest in cliffs and boulders. Uncommon resident.	Not expected to occur in PIA given lack of suitable foraging and nesting habitat.
Long-eared owl (nesting) *Asio otis*	CSC	Riparian woodland, oak woodland, tamarisk woodland. Rare resident and winter visitor. Localized breeding.	Moderate potential to occur during winter given the presence of suitable habitat.
Southwestern willow flycatcher (nesting) *Empidonax traillii extimus*	FE, SE	Nesting restricted to willow thickets. Also occupies other woodlands. Rare spring and fall migrant, rare summer resident. Extremely localized breeding.	Not expected to occur given the lack of suitable mature willow habitat and herbaceous understory.
Least Bell's vireo (nesting) *Vireo bellii pusillus*	FE, SE	Willow riparian woodlands. Summer resident.	Not expected to occur given the lack of suitable mature willow habitat.
Yellow warbler (nesting) *Dendroica petechia brewsteri*	CSC	Breeding restricted to willow riparian woodland. Spring and fall migrant, localized summer resident, rare winter visitor.	Not expected to occur given the lack of willow riparian woodland habitat.
Yellow-breasted chat (nesting) *Icteria virens*	CSC	Dense willow riparian woodland. Localized summer resident.	Not expected to occur given the lack willow riparian habitat.
Mammals (Nomenclature from Jones et al. 1997)			
Pallid bat *Antrozous pallidus*	CSC	Arid deserts and grasslands. Shallow caves, crevices, rock outcrops, buildings, tree cavities. Especially near water. Colonial. Audible echolocation signal.	Not expected to occur. Site lacks required habitat components.
Small-footed myotis *Myotis ciliolabrum*	*	Nest in cliff-face crevices, erosion cavities, and beneath rocks on the ground in desert chaparral. Can be found hibernating in caves or mines.	Not expected to occur. Site lacks required habitat components.

TABLE 5
SENSITIVE WILDLIFE SPECIES KNOWN OR
POTENTIALLY OCCURRING ON THE LAWSON VALLEY BRIDGE REPLACEMENT SITE
(continued)

Species	Status	Habitat	Occurrence/Comments
Long-eared myotis *Myotis evotis*	*	Coniferous or oak forests, near rocky bluffs or canyons, caves, and buildings.	Moderate potential to forage in the PIA given the presence of suitable oak woodland. No evidence of bat roosting was observed under the bridge.
Fringed myotis *Myotis thysanodes*	*	Pinyon-juniper, valley foothill hardwood and hardwood-conifer forest from sea level to 9350 ft; requires caves, mines, buildings for roosting, a permanent source of water for foraging.	Low potential to occur. Site lacks required habitat components. No evidence of bat roosting was observed under the bridge.
Yuma myotis *Myotis yumanensis*	*	Roost in caves, mines, and often buildings and bridges, forages over forested streams.	Moderate potential to forage in the PIA given the presence of suitable habitat. No evidence of bat roosting was observed under the bridge.
Long-legged myotis *Myotis volans*	*	Coniferous forest or sometimes desert or riparian habitats, colonies in buildings, rock crevices, and trees, forages over open water and open woods.	Not expected to occur. Site is not within habitat range for species.
Big free-tailed bat *Nyctinomops macrotis*	CSC	Rugged, rocky terrain. Roost in crevices, buildings, caves, tree holes. Very rare in San Diego County. Colonial. Migratory.	Not expected to occur in PIA given lack of suitable habitat components and rarity.
Townsend's western big-eared bat *Corynorhinus townsendii townsendii*	CSC	Caves, mines, buildings. Found in a variety of habitats, arid and mesic.	Moderate potential to forage in the PIA given the presence of suitable habitat. No evidence of bat roosting was observed under the bridge.

TABLE 5
SENSITIVE WILDLIFE SPECIES KNOWN OR
POTENTIALLY OCCURRING ON THE LAWSON VALLEY BRIDGE REPLACEMENT SITE
(continued)

Species	Status	Habitat	Occurrence/Comments
Western mastiff bat *Eumops perotis californicus*	CSC	Woodlands, rocky habitat, arid and semiarid lowlands, cliffs, crevices, buildings, tree hollows. Audible echolocation signal.	Moderate potential to forage in the PIA given the presence of suitable habitat. No evidence of bat roosting was observed under the bridge.
Pocketed free-tailed bat *Nyctinomops femorosacca*	CSC	Normally roost in crevice in rocks, slopes, cliffs. Lower elevations in San Diego and Imperial Counties. Colonial. Leave roosts well after dark.	Not expected to occur in PIA given lack of suitable habitat components and rarity.
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	CSC	Open areas of scrub, grasslands, agricultural fields.	Not expected to occur given the lack of suitable open habitat.
Dulzura California pocket mouse *Chaetodipus californicus femoralis*	CSC	Brushy areas of coastal sage scrub, chamise-redshank and montane chaparral, sagebrush, annual grassland, valley foothill hardwood, valley foothill hardwood–conifer and montane hardwood. Probably most attracted to interface of grassland and brush.	Not expected to occur given the lack of suitable scrub habitat.
San Diego desert woodrat *Neotoma lepida intermedia*	CSC	San Diego County west of mountains in sparse, disturbed coastal sage scrub or grasslands with sandy soils.	Not expected to occur given the PIA is east of the species known range. No suitable habitat or woodrat middens were observed.
Southern mule deer *Odocoileus hemionus fuliginata*	*	Many habitats. Localized.	Moderate potential to occur within PIA.

STATUS CODES

Listed/Proposed
FE = Listed as endangered by the federal government
FT = Listed as threatened by the federal government
SE = Listed as endangered by the state of California

TABLE 5
SENSITIVE WILDLIFE SPECIES KNOWN OR
POTENTIALLY OCCURRING ON THE LAWSON VALLEY BRIDGE REPLACEMENT SITE
(continued)

Other
BEPA = Bald and Golden Eagle Protection Act
CFP = California fully protected species
* = Taxa listed with an asterisk fall into one or more of the following categories:

- Taxa considered endangered or rare under Section 15380(d) of CEQA guidelines
- Taxa that are biologically rare, very restricted in distribution, or declining throughout their range
- Population(s) in California that may be peripheral to the major portion of a taxon's range, but which are threatened with extirpation within California
- Taxa closely associated with a habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands)

stages of life. Upland sandy terrace habitats of sufficient width and quality with areas of loose sandy soil are where adult toads can burrow outside the breeding season.

- Few or no non-native wildlife species (e.g. crustaceans, game fish, and bullfrogs), which may compete with or prey on adult or juvenile toads and/or tadpoles and plant [e.g. giant reed (*Arundo donax*)] which choke out native vegetation and may alter flood patterns.
- Streams and upland areas absent from artificial barriers which interfere with natural flooding regimes and toad movement (e.g. migration to and from breeding pools, dispersal between populations, or recolonization of previously occupied areas).
- Habitats undisturbed by grading, agriculture, or other human-associated land use conversions.

Arroyo toads breed in pools lacking vegetation, with the majority of the pool greater than one-foot deep with a substrate of sand, gravel, or pebbles. Sub-adults and adults can range into surrounding uplands as much as 0.5 mile to 1.2 miles away from the stream (USFWS 1999b). Arroyo toads are nocturnal and breed from March to June, depending on local climate. The main threats to arroyo toad are degradation and loss of riparian habitat, and predation by bullfrogs (*Rana catesbeiana*).

Habitat assessments for arroyo toad were conducted in 2002 (Varanus 2002; Appendix E) and by RECON in 2003, 2004, and 2005. No arroyo toad breeding habitat is present within the PIA and study area, given the lack of primary constituent elements. Arroyo toads are not expected to occur within the study area. Lawson Valley Creek, a tributary to the Sweetwater River, lies within a relatively small watershed and is relatively close to the creek headwaters at Lawson Peak (Varanus 2002). Most of the creek bed within 100 feet of the bridge is shaded by mature coast live oaks and lacks unshaded areas of streamside vegetation. Substrate in the immediate vicinity of the creek is a combination of sandy streambed, sandy loams, and rock outcrops. The small and narrow character of the creek and fast moving hydrologic regime precludes the regular formation of sandy streamside sandbars and terraces required for arroyo toad breeding habitat. In addition, the majority of the upland habitat immediately adjacent to the creek supports loamy soils, which would preclude upland burrowing habitat.

Both of the known arroyo toad locations in the area are greater than two km away from Lawson Valley Bridge. These locations include Sloan Canyon at the Sweetwater River and the confluence of the Sweetwater River and the Loveland Reservoir at Sweetwater Falls Dam (State of California 2009c). These populations are located in isolated pockets

within limited areas of suitable breeding habitat in low gradient sandy watersheds in downstream portions of larger watersheds such as the Sweetwater River (Varanus 2002).

Although suitable habitat was not identified within the study area, focused surveys for arroyo toad were conducted in 2006 and 2008 based on correspondence with USFWS and the Department. No arroyo toads were detected during focused surveys, which supports the habitat assessment discussed above.

Coronado skink (Eumeces skiltonianus interparietalis). The Coronado skink is a CDFG species of special concern. The Coronado skink ranges from central Riverside County south to Baja California, Mexico (Jennings and Hayes 1994). In San Diego County, the Coronado skink is found in a variety of plant communities including grassland, open woodland, forest, and broken chaparral habitats and is often associated with mesic areas. The Coronado skink is diurnal and most active from early spring until fall; breeding occurs in June or July (Zweifel 1952; Jennings and Hayes 1994). The diet of the Coronado skink consists of moths, beetles, crickets, grasshoppers, and leafhoppers. This species is threatened by habitat loss and fragmentation resulting from urbanization and agriculture.

There is a high potential for the Coronado skink to occur given that suitable open woodland and mesic habitat is present within the study area. This species was not observed during surveys.

Coastal western whiptail (Cnemidophorus tigris multiscutatus). The coastal subspecies of the western whiptail has no official state or federal status but was formerly a federal candidate for listing and is considered sensitive by CDFG. The coastal western whiptail ranges from Santa Barbara County south into western Baja California, Mexico, predominantly on the coastal slope. Habitat consists of coastal sage scrub and chaparral communities, woodlands, and streamsides where plants are sparsely distributed (Stebbins 1985). Its diet consists of insects, spiders, scorpions, and other lizards. The decline of populations of coastal western whiptail is also attributed to habitat loss and fragmentation.

There is a high potential for the coastal western whiptail to occur given that suitable woodland and streamside habitat is present within the study area. This species was not observed during surveys.

Southwestern willow flycatcher (Empidonax traillii extimus). The southwestern willow flycatcher is federally and state listed as endangered. This migratory bird breeds

in southern California, Arizona, New Mexico, extreme southern portions of Nevada and Utah, western Texas, and extreme northwestern Baja California, Mexico (USFWS 1995). The southwestern willow flycatcher is present in San Diego County in late spring and summer, where it breeds in only a few locations (Unitt 2004). Southern willow flycatcher requires mature willow thickets in riparian woodland habitat for breeding and nesting activities. Nests are built in tall trees with a high percentage of canopy cover and dense foliage. The diet consists mainly of insects and the occasional fruit (Sedgwick 2000). Southern willow flycatchers are extremely sensitive to human activity in riparian areas. Threats to the southern willow flycatcher include loss of riparian habitat due to water diversion, flood control, urbanization, grazing, and invasion of non-native species. Parasitism by brown-headed cowbirds has been a significant factor in the decline of this species in California and Arizona and elsewhere (Sedgwick 2000).

Southwestern willow flycatcher was not observed during general surveys conducted in the breeding season, and the species is not expected to occur within the study area or surrounding areas. A habitat assessment was conducted in 2003 (2003; see Appendix F), 2004, and 2005 to assess the potential for the site to support the species, and the site conditions were verified in 2008. The site is located within a relatively small watershed lacking suitable mature willow riparian habitat, dense herbaceous understory, and the width and density of vegetation required for breeding. There are no known locations of southwestern willow flycatcher occurring within five km of the bridge (State of California 2009c).

Least Bell's vireo (Vireo bellii pusillus). The least Bell's vireo is federally and state listed as endangered. Its historical breeding range once extended from northwestern Baja California, Mexico, to interior northern California, as far north as Red Bluff in Tehama County, California (Franzreb 1989). Its current distribution is now restricted to eight southern counties, the majority occurring in San Diego County (USFWS 1998). Least Bell's vireo winters in Mexico and breeds in southern California and northern Baja California, Mexico. The species is exclusively found in riparian habitats, including cottonwood-willow woodlands and forests, oak woodlands, and mule fat scrub, and require dense cover for nesting (USFWS 1998). Least Bell's vireo arrives at the breeding grounds in mid-March and remains until September or October. This species' diet consists primarily of insects and spiders and some fruit (Brown 1993). Populations of least Bell's vireo have declined drastically due to extensive loss of riparian habitat to agricultural and urban development, including channelization and mining of streams, and nest parasitism by brown-headed cowbirds (*Molothrus ater*). The population has increased due to extensive brown-headed cowbird trapping programs.

Least Bell's vireo was not observed during general surveys conducted in the breeding season, and the species is not expected to occur within the study area or surrounding areas. The oak riparian canopy is tall and dense but the site is located within a relatively small watershed lacking suitable mature willow riparian habitat, dense herbaceous understory, and the width and density of vegetation required for breeding. The closest known locations to the bridge of least Bell's vireo occur in the Sweetwater River west of Sloan Canyon and the Loveland Reservoir (State of California 2009c).

3.2.4. Wildlife Movement Corridors

Wildlife movement corridors are defined as habitat linkages that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features such as canyon drainages, ridgelines, or areas with vegetation cover provide corridors for wildlife travel. Wildlife movement corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high population density areas; and facilitate the exchange of genetic traits between populations (Beier and Loe 1992). Wildlife movement corridors are considered sensitive by the County of San Diego, the USFWS, and CDFG

Currently, wildlife can move freely through the Lawson Valley Creek and under Lawson Valley Bridge. The study area is not located within a regionally significant movement corridor or habitat linkage (Figure 6).

3.3. Wetland Delineation

A routine wetland delineation, following the current guidelines set forth by the ACOE (1987, 2006), was performed to gather field data at potential jurisdictional wetland sites in the study area. Eight test pits were dug within the study area to determine if changes have occurred since the 2005 wetland delineation. Figures 7a and 7b show the locations of soil test pits taken within the study area and PIA. Wetland delineation forms are provided in Appendix G.

3.3.1. Hydrophytic Vegetation

The majority of the Lawson Valley Creek streambed occurs within the understory of the coast live oak riparian habitat. The channel is mainly vegetated with southern willow scrub with the exception of bare ground and rock beneath the bridge and approximately 200 feet upstream, rock outcrops among the coastal sage scrub at the far west end of the

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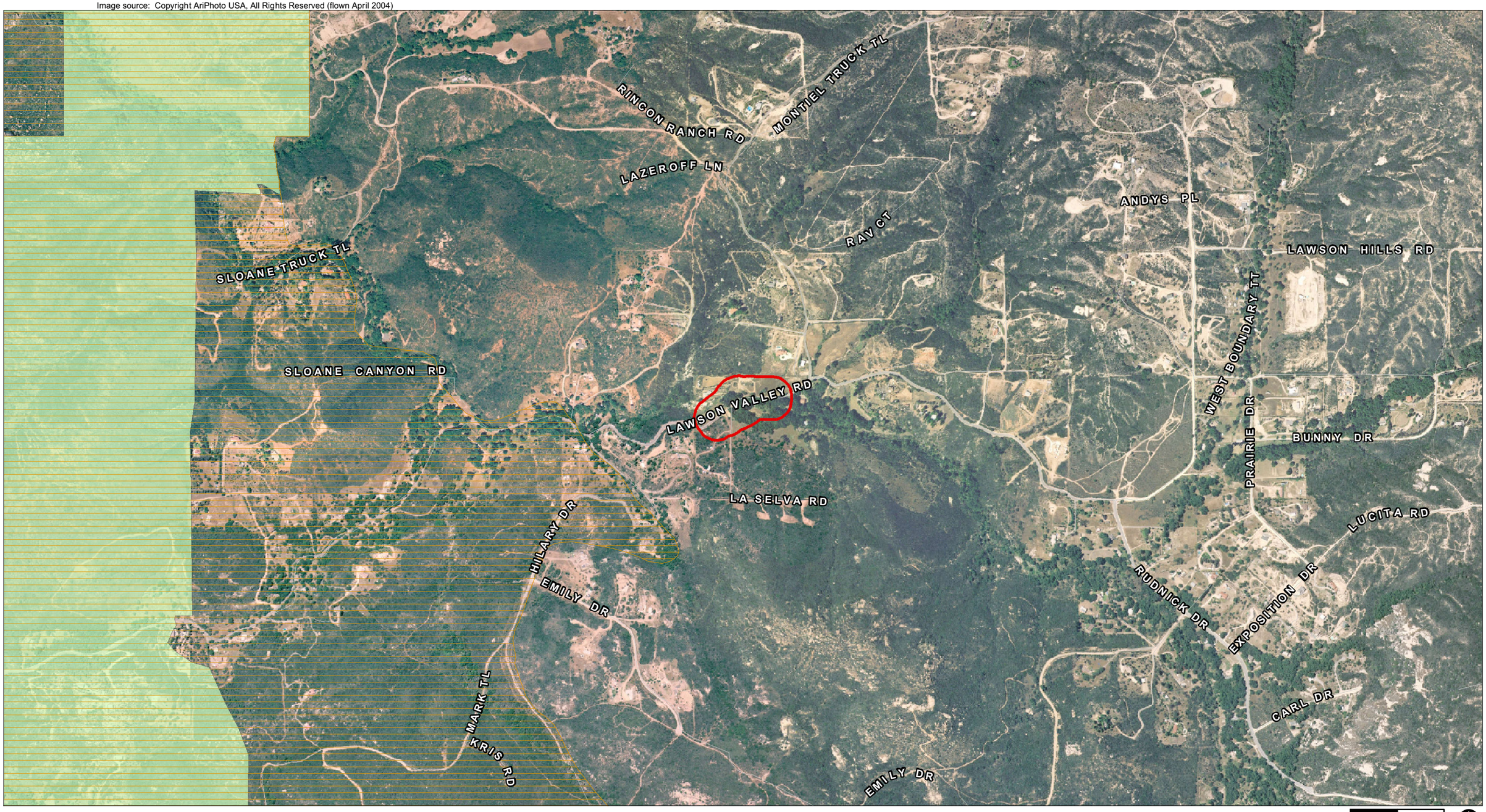

Study Area

County of San Diego MSCP Sub Area Plan boundary

Pre-Approved Mitigation Area

RECON

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FIGURE 6

Location of the Lawson Valley Road Bridge Project in Relation to MSCP Preserve Area

study area, and a patch of freshwater marsh approximately 50 feet downstream of the bridge (see Figures 5, 7a, and 7b).

Vegetation dominating the southern willow scrub portion of the channel includes arroyo willow (FACW) with scattered emergent California sycamore (FACW). An understory dominated by mule fat (FACW), western ragweed (FAC species), panicled bulrush (OBL), and western white clematis (FAC) is also present.

The patch of valley freshwater marsh located west of the bridge and outside of the PIA is canopied by arroyo willow and California sycamore along the banks. The streambed is densely vegetated with broadleaf cattail (OBL), water mudwort (OBL), and panicled bulrush. The rocky outcrops bear sparse growths of annual rabbitsfoot grass *(*FACW) and mule fat, as well as weedy species such as asthmaweed (NI).

3.3.2. Hydrology

The project site is located at approximately 1,730 to 1,760 feet above mean sea level. Lawson Valley Creek, a U.S. Geological Survey blue-line stream, is a tributary to the Sweetwater River and is within the Sweetwater Hydrologic Unit under the Water Quality Control Plan for the San Diego Basin (Basin Plan).

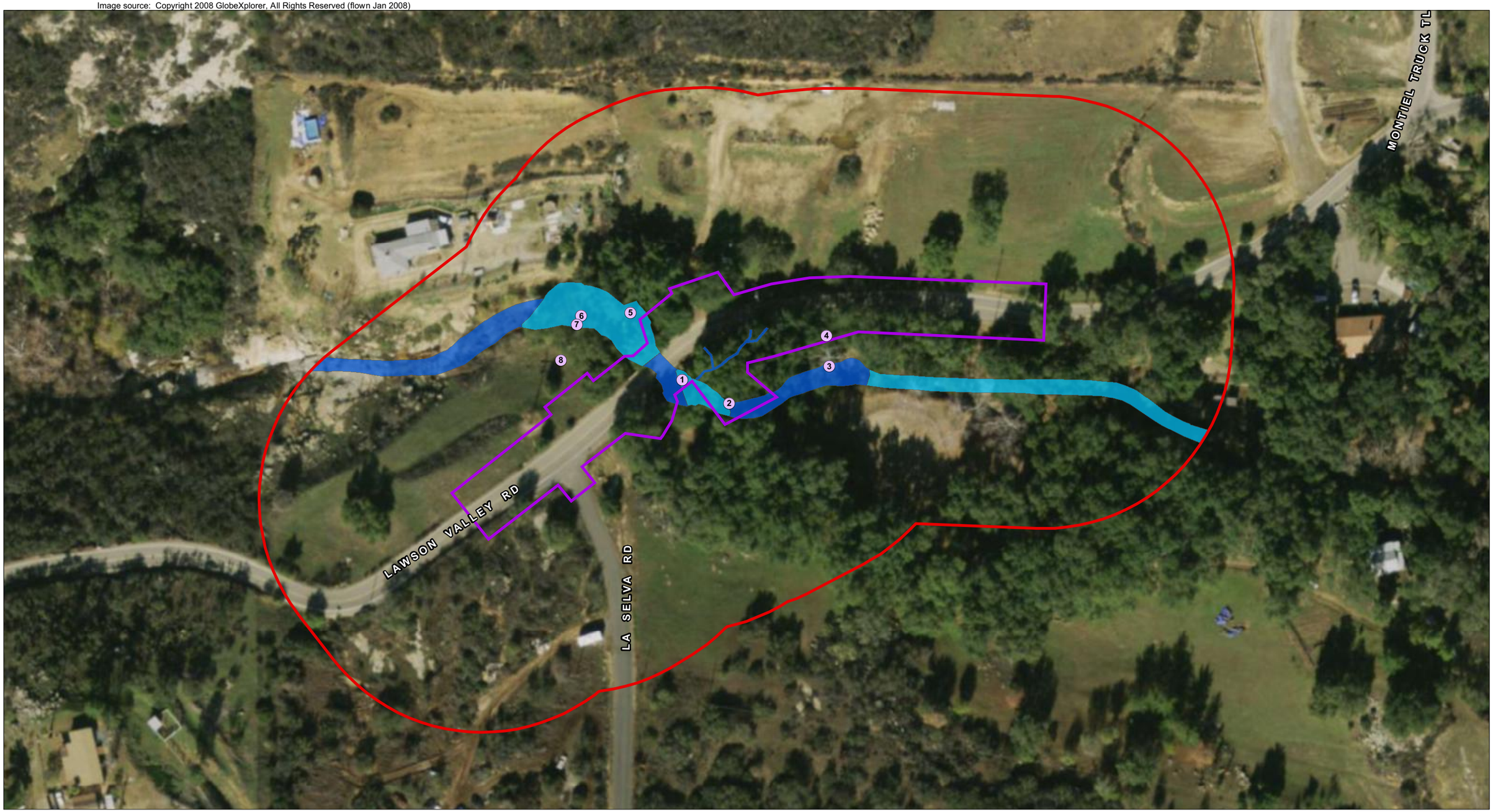
Lawson Valley Creek flows northwest under the bridge towards the Sweetwater River. Wetland hydrology indicators noted in the study area include surface water, high water table, saturation, and drainage patterns.

3.3.3. Hydric Soils

The Soil Survey for San Diego County has identified three soil series: Cieneba, Fallbrook, and Ramona, within the study area (USDA 1975). Soil types mapped within the study area are described above in Section 3.2 of this report and illustrated in Figure 4. None of these soil series are listed as hydric by the Natural Resource Conservation Service (USDA 1995).

Eight soil test pits were excavated in and adjacent to Lawson Valley Creek within the study area to determine the extent of the hydric soils. The locations of these test pits are shown in Figures 7a and 7b. Test Pits 1 and 5 were located upstream and downstream of the bridge on sandbars within the creek channel, approximately two feet from flowing water. Test Pits 2, 3, 6, and 7 were located adjacent to transitional wetland areas along the bank of the creek. Test Pits 4 and 8 were located upland from the creek underneath the oak tree canopy.

Image source: Copyright 2008 GlobeXplorer, All Rights Reserved (flown Jan 2008)



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Study Area
Project Impact Area
Soil Test Pits
ACOE Non-wetland Waters of the US
ACOE Wetland

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FIGURE 7A
Existing ACOE Jurisdictional Waters witin the
Lawson Valley Road Bridge Project Study Area

Image source: Copyright 2008 GlobeXplorer, All Rights Reserved (flown Jan 2008)

Study Area
Project Impact Area
Soil Test Pits
CDFG Riparian
CDFG Streambed

0 Feet 100

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FIGURE 7B
Existing CDFG Jurisdictional Waters witin the
Lawson Valley Road Bridge Project Study Area

Soils for Test Pits 1, 2, 3, 5, and 7 consisted of a very dark grayish brown (10 YR 3/2), saturated, sandy loam topsoil with a sandy substrate dominated by olive brown (2.5 Y 4/3) to very pale brown (10 YR 7/4). Furthermore, a high water table of six to 12 inches was present at Test pits 1, 2, 5, and 6. Soils for Test Pits 4 and 8 consisted of a very dark grayish brown (10 YR 3/2) coarse sandy loam throughout. No mottles or evidence of reducing conditions were observed at any of the eight Test Pits. Soil profiles for Test Pits 1, 2, 3, 5, and 7 exhibited hydric soils characterized by hydric field indicator S1 (Sandy Mucky Mineral). No hydric soil indicators were observed at Test Pits 4 or 8.

3.3.4. Assessment of Jurisdiction

Figures 7a and 7b show the locations of jurisdictional waters within the study area and PIA. Jurisdictional resources were delineated on-site according to current ACOE and CDFG regulations and are summarized below in Table 6.

TABLE 6
EXISTING JURISDICTIONAL RESOURCES
WITHIN THE LAWSON VALLEY ROAD BRIDGE PROJECT
STUDY AREA AND PIA

Jurisdictional Resources	Study Area In Acres	PIA In Acres
ACOE Jurisdiction (Waters of the U.S.)		
Wetlands	0.305	0.036
Non-wetland Waters*	0.220	0.046
TOTAL ACOE	*0.525*	*0.082*
CDFG Jurisdiction (Waters of the State)		
Riparian**	3.534	0.538
Streambed	0.130	0.023
TOTAL CDFG	*3.664*	*0.561*
TOTAL RWQCB Jurisdiction	*3.664*	*0.561*

*ACOE non-wetland waters include CDFG streambed.
**CDFG riparian includes ACOE wetland and overlaps with ACOE non-wetland waters.

3.3.4.1. ACOE JURISDICTIONAL WATERS OF THE U.S.

The presence of an ordinary high watermark and a connection to the Pacific Ocean were used to determine the jurisdictional status of Lawson Valley Creek and the connecting ephemeral drainage. As indicated by wetland vegetation, hydrology, and developing hydric soils, wetland habitat has formed within the creek both upstream and downstream of the bridge. Within the PIA, approximately 0.036 acre of Lawson Valley Creek falls under the jurisdiction of ACOE wetlands. Furthermore, 0.046 acre (575 linear feet) of the streambed and connecting ephemeral drainage (Photograph 7) meets the criteria for ACOE non-wetland waters of the U.S. (see Figure 7a). The total

PHOTOGRAPH 7
Ephemeral Drainage Leading from Road Upstream of Bridge, Facing North from Lawson Valley Creek (2008)

acreage for ACOE non-wetland waters includes the CDFG streambed discussed below. The total acreage for ACOE non-wetland waters is in excess of that reported as CDFG streambed, because the connecting ephemeral drainage that is mapped as non-wetland waters occurs in the understory of coast live oak riparian forest and, therefore, overlaps with CDFG riparian habitat. Non-wetland waters were not considered wetland given the lack of hydric soil and hydrophytic vegetation parameters.

The acreage for wetlands and waters of the U.S. were determined by multiplying the lateral extent of the ordinary high watermarks at selected locations by the length of the stream. In addition to ordinary high watermarks, drift lines and cut banks were observed in areas that were determined to be jurisdictional waters.

3.3.4.2. CDFG JURISDICTIONAL WATERS OF THE STATE

Within the PIA, approximately 0.023 acre of Lawson Valley Creek falls under the jurisdiction of CDFG as unvegetated streambed. Additionally, the 0.538 acre of southern willow scrub and coast live oak riparian forest located along the stream bank and floodplain terraces above the ordinary high water mark (see Figure 7b) meet the criteria for CDFG riparian habitat. CDFG riparian habitat includes ACOE wetlands.

3.3.4.3. RWQCB JURISDICTIONAL WATERS OF THE STATE

The RWQCB takes jurisdiction over all waters of the state and all waters of the United States as mandated by both the federal CWA and the California Porter-Cologne Water Quality Control Act. A total of 0.561 acre of the PIA is within the RWQCB jurisdiction.

Chapter 4. Results: Biological Resources, Discussion of Impacts and Mitigation

The PIA for the proposed project covers approximately 1.19 acres. Anticipated biological impacts for this project were assessed according to NEPA and CEQA. Mitigation is required for project impacts that are considered adverse under NEPA or CEQA guidelines, including impacts to listed species, sensitive vegetation communities, wetlands, and wildlife movement corridors. Mitigation is intended to reduce the adverse effects of the proposed action. Mitigation measures typically employed include avoidance and habitat preservation, habitat restoration, and the payment of fees into a mitigation bank.

4.1. Natural Communities of Special Concern

The impact assessment assumes temporary and permanent impacts will only occur within the PIA. The project impacts are summarized in Table 7 and depicted on Figure 8.

TABLE 7
PROPOSED IMPACTS TO VEGETATION COMMUNITIES/LAND COVER TYPES WITHIN THE LAWSON VALLEY ROAD BRIDGE REPLACEMENT PROJECT STUDY AREA

Vegetation Community/Land Cover Type	Permanent Impacts In Acres	Temporary Impacts In Acres	Total Impacts In Acres
Coast live oak riparian forest	0.127	0.329	0.456
Southern willow scrub	-	0.036	0.036
Freshwater marsh	-	-	-
Coastal sage scrub	-	-	-
Southern mixed chaparral	-	0.021	0.021
Non-native grassland	0.015	0.145	0.160
Bare ground	-	0.010	0.010
Developed land	0.298	0.162	0.460
TOTAL	0.440	0.703	1.143

Permanent impacts, as described in Section 1.2 Project Description, will occur as a result of realignment of Lawson Valley road, excavation for and placement of abutments, retaining wall placement, concrete brow ditch installation, and concrete rock slope protection. Permanent impacts will occur to the following: 0.127 acre of coast live oak riparian forest and 0.015 acre of non-native grassland. All of these permanent impacts are considered adverse and will require mitigation. Mitigation for permanent impacts to coast live oak riparian forest and non-native grassland will occur on-site. The total permanent impact to developed areas is 0.298 acre; this impact is not considered adverse.

Temporary impacts will occur as a result of construction of temporary access roads, clearing and grubbing of vegetation, channel grading, creation of fill slopes, and the placement of fiber rolls and slope stabilization binders to control erosion. Because all areas proposed for fill or excavation that are outside the footprint of the proposed road, bridge, and associated structures, will be restored to native vegetation following completion of the project, these impacts are considered temporary. The project will temporarily impact 0.329 acre of coast live oak riparian forest, 0.036 acre of southern willow scrub, 0.021 acre of southern mixed chaparral, and 0.145 acre of non-native grassland. These impacts are considered adverse and will require mitigation. The total temporary impact to bare ground and developed areas is 0.172 acre; this impact is not

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Study Area
Permanent Impacts
Temporary Impacts
Dirt Driveways

Sesitive Species Sitings (RECON 2005)
Western Bluebird
Red-tailed Hawk Nest
San Diego Sagewort
Coast Live Oak to be Removed

Vegetation Type and Land Cover
Coastal Sage Scrub
Coast Live Oak Riparian Forest
Non-native Grassland
Southern Mixed Chaparral
Southern Willow Scrub
Freshwater Marsh
Bare Ground
Developed

0 Feet 100

RECON

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FIGURE 8
Impacts to Vegetation Communities and Sensitive Species within the Lawson Valley Road Bridge Project Study Area

considered adverse except where the bare ground occurs within jurisdictional waters (see Section 4.1.4.).

In areas where the proposed work occurs within the footprint of existing paved roads or dirt driveways that lie beneath the canopy of coast live oak riparian forest or southern willow scrub, no direct impacts to the native vegetation are anticipated (see Figure 8). Impacts are not anticipated in these areas due to the following reasons: (1) no understory vegetation would be impacted, (2) no trimming of tree canopies is proposed, (3) usage of the roads/driveways is not expected to significantly change, and (4) soil is already compacted due to past and current vehicular usage.

4.1.1. Discussion of Coast Live Oak Riparian Forest Impacts and Mitigation

This section describes the coast live oak forest and jurisdictional areas located within the PIA, anticipated impacts, and proposed avoidance, minimization, and mitigation measures.

4.1.1.1. SURVEY RESULTS

Coast live oak riparian forest is present along Lawson Valley Creek. This sensitive riparian vegetation community is characterized by an open canopy cover of coast live oak trees with an understory interspersed with non-native grasses, shrubs, herbaceous plants, and leaf litter. Jurisdictional wetlands and waters of the U.S. are present within Lawson Valley Creek, which meanders beneath the coast live oak riparian woodland canopy.

4.1.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

The identified PIA is the minimum area required to construct the proposed project. Project features, including staging areas and access roads, have been located/designed to minimize impacts to sensitive biological resources, including coast live oak riparian forest.

All coast live oak trees will be protected in place where possible. Trees that are immediately adjacent to the realignment of Lawson Valley Road and located within fill slopes will be protected with retaining walls. The retaining walls are designed to be minimally invasive with respect to the trees' root systems.

4.1.1.3. PROJECT IMPACTS

Permanent impacts to coast live oak riparian forest (CDFG riparian habitat) total 0.127 acre and are considered adverse. Temporary impacts to coast live oak riparian woodland total 0.329 acre and are considered adverse (see Table 7 and Figure 8).

The majority of proposed direct impacts will occur to the understory vegetation within the coast live oak riparian forest. Through extensive project redesigns, the County was able to minimize impacts to oak trees, reducing the impact from more than ten individuals removed to one. This tree cannot be protected in place due to its location within an area that is proposed for excavation (see Figure 8).

4.1.1.4. COMPENSATORY MITIGATION

Mitigation will be required for all permanent and temporary impacts to coast live oak riparian forest. Permanent impacts to 0.127 acre of coast live oak riparian forest (CDFG riparian habitat) will require mitigation at a ratio of 2:1, for a total of 0.254 acre (Table 8). Temporary impacts to 0.329 acre of coast live oak riparian forest (CDFG riparian habitat) will require mitigation at a ratio of 1:1, for a total of 0.329 acre (see Table 8).

Temporary impacts will be mitigated on-site through revegetation of all temporarily impacted areas (see Figure 8 and Chapter 6).

Permanent impacts will be mitigated on-site through enhancement of 0.254 acre of the existing coast live oak riparian forest within the PIA, 0.143 acre of which is within the existing right-of-way (ROW). This on-site mitigation area is shown as "Coast Live Oak Riparian Forest Enhancement" on Figure 10. A conceptual mitigation plan will be prepared which will propose specific enhancement/restoration activities to occur.

4.1.1.5. CUMULATIVE IMPACTS

The project consists of the replacement of an existing bridge and would result in minimal impacts to coast live oak riparian forest located at the bridge site and adjacent to Lawson Valley Road. Permanent and temporary impacts to coast live oak riparian forest resulting from the proposed project would be mitigated on-site at ratios of 2:1 and 1:1, respectively. Therefore, the project would not contribute to a potential adverse cumulative impact to coast live oak riparian forest.

4.1.2. Discussion of Southern Willow Scrub Impacts and Mitigation

This section describes the southern willow scrub and jurisdictional areas located within the PIA, anticipated impacts, and proposed avoidance, minimization, and mitigation measures.

4.1.2.1. SURVEY RESULTS

Southern willow scrub is present along Lawson Valley Creek. This sensitive riparian vegetation community is characterized by willow trees that form a continuous canopy

TABLE 8
VEGETATION COMMUNITIES/LAND COVER TYPES, JURISDICTIONAL RESOURCES, IMPACTS, AND MITIGATION FOR THE LAWSON VALLEY ROAD BRIDGE REPLACEMENT PROJECT

Jurisdictional Resources	Permanent Impacts In Acres	Mitigation Ratio	Required Mitigation In Acres	Temporary Impacts In Acres	Mitigation Ratio	Required Mitigation In Acres	Total Required Mitigation In Acres
Jurisdictional Resources							
Coast live oak riparian forest (CLORF)							
•*CDFG Riparian/ RWQCB*	0.127	2:1 enhancement	0.254	0.329	1:1	0.329	0.583
•*ACOE Non-wetland Waters [occurs beneath canopy of CLORF]*	0.005	1:1 creation	0.005	0.018	1:1	0.018	0.023
Southern willow scrub							
•*ACOE Wetland/ CDFG Riparian/ RWQCB*	-	2:1 (1:1 enhancement; 1:1 creation)	-	0.036	1:1	0.036	0.036
Bare ground [includes area beneath bridge]							
•*ACOE Non-wetland Waters/ CDFG Streambed/ RWQCB*	-	1:1	-	0.023	1:1	0.023	0.023
Non-jurisdictional Resources							
Southern mixed chaparral	-	0.5:1	-	0.021	1:1	0.021	0.021
Non-native grassland	0.015	0.5:1 native grassland restoration	0.008	0.145	1:1	0.145	0.153
Developed land	0.298	-	-	0.149 †	-	-	-
TOTAL	0.445	-	0.267	0.721	-	0.572	0.839

†Area that overlaps with the bridge has been removed for mitigation calculation purposes; this area is accounted for under bare ground.

with the adjacent coast live oak riparian forest. The understory consists of scattered emergent California sycamore and native shrubs and herbaceous plant species. Southern willow scrub qualifies as ACOE wetland and CDFG riparian habitat.

4.1.2.2. AVOIDANCE AND MINIMIZATION EFFORTS

The identified PIA is the minimum area required to construct the proposed project. Project features, including staging areas and access roads, have been located/designed to minimize impacts to sensitive biological resources, including southern willow scrub.

4.1.2.3. PROJECT IMPACTS

No permanent impacts to southern willow scrub (ACOE wetland/CDFG riparian habitat) are anticipated to occur as a result of the proposed project. Temporary impacts to southern willow scrub (ACOE wetland/CDFG riparian habitat) total 0.036 acre and are considered adverse (see Table 7 and Figure 8).

4.1.2.4. COMPENSATORY MITIGATION

Mitigation will be required for all temporary impacts to southern willow scrub. Temporary impacts to 0.036 acre of southern willow scrub (ACOE wetland/CDFG riparian habitat) will require mitigation at a ratio of 1:1, for a total of 0.036 acre (see Table 8).

Temporary impacts will be mitigated on-site through revegetation of all temporarily impacted areas (see Figure 8 and Chapter 6).

4.1.2.5. CUMULATIVE IMPACTS

The project consists of the replacement of an existing bridge and would result in minimal impacts to southern willow scrub adjacent to the proposed bridge. Temporary impacts to southern willow scrub resulting from the proposed project would be mitigated on-site at a ratio of 1:1. Therefore, the project would not contribute to a potential adverse cumulative impact to southern willow scrub.

4.1.3. Discussion of Non-native Grassland Impacts and Mitigation

This section describes the non-native grassland located within the PIA, anticipated impacts, and proposed avoidance, minimization, and mitigation measures.

4.1.3.1. SURVEY RESULTS

The non-native grassland on-site, mostly located in the western portion of the project area, is dominated by wild oats and brome grasses.

4.1.3.2. AVOIDANCE AND MINIMIZATION EFFORTS

The identified PIA is the minimum area required to construct the proposed project. Project features, including locations of staging areas and access road, have been located and designed to minimize impacts to sensitive biological resources, including non-native grassland.

4.1.3.3. PROJECT IMPACTS

Permanent impacts to non-native grassland total 0.015 acre, and temporary impacts total 0.145 acre (see Table 7 and Figure 8). These impacts are considered adverse.

4.1.3.4. COMPENSATORY MITIGATION

Mitigation will be required for all permanent and temporary impacts to non-native grassland. Permanent impacts to 0.015 acre of non-native grassland will require mitigation at a ratio of 0.5:1, for a total of 0.008 acre (see Table 8). Temporary impacts to 0.145 acre of non-native grassland will require mitigation at a ratio of 1:1, for a total of 0.145 acre (see Table 8).

Temporary impacts are proposed to be mitigated through on-site revegetation of all temporarily impacted areas.

Permanent impacts will be mitigated on-site through restoration of existing non-native grassland to native grassland. The area proposed for restoration of native grassland is located within the existing ROW and is shown as “Native Grassland Restoration” on Figure 10.

4.1.3.5. CUMULATIVE IMPACTS

The project consists of the replacement of an existing bridge and would result in minimal temporary and permanent impacts to non-native grassland located adjacent to Lawson Valley Road. Permanent and temporary impacts to non-native grassland resulting from the proposed project would be mitigated at ratios of 0.5:1 and 1:1, respectively. Therefore, the project would not contribute to a potential adverse cumulative impact to non-native grassland.

4.1.4. Discussion of Wetlands and Other Waters Impacts and Mitigation

4.1.4.1. SURVEY RESULTS

A wetland delineation was conducted by RECON in 2003, 2005, and 2008. Four jurisdictional categories are found within the PIA: ACOE jurisdictional wetlands and waters of the U.S., and CDFG streambed and riparian habitat. The results presented below represent the 2008 delineation.

4.1.4.2. AVOIDANCE AND MINIMIZATION MEASURES

The identified PIA is the minimum area required to construct the proposed project. Project features, such as channel grading; have been limited to the boundary of the PIA, to minimize impacts to sensitive biological resources, such as jurisdictional areas.

4.1.4.3. PROJECT IMPACTS

The proposed project will result in temporary impacts to 0.036 acre of ACOE wetlands, 0.041 acre of ACOE non-wetland waters of the U.S., 0.365 acre of CDFG riparian habitat, and 0.023 acre of CDFG streambed. The CDFG riparian includes all ACOE wetland, and CDFG streambed overlaps with 0.023 acre of ACOE non-wetland waters. ACOE non-wetland waters include all CDFG streambed. Permanent impacts to ACOE non-wetland waters total 0.005 acre and to CDFG riparian habitat total 0.127 acre. Impacts to jurisdictional areas are summarized in Table 9 and Figures 9a and 9b.

TABLE 9
PROPOSED JURISDICTIONAL RESOURCES IMPACTS FOR THE LAWSON VALLEY ROAD BRIDGE REPLACEMENT PROJECT

Jurisdictional Resources	Permanent Impacts In Acres	Temporary Impacts In Acres	Total Impacts In Acres
ACOE Resources			
Wetland	-	0.036	0.036
Non-wetland waters*	0.005	0.041	0.046
Total ACOE Resource Impacts	*0.005*	*0.077*	*0.082*
CDFG Resources			
Riparian**	0.127	0.365	0.492
Streambed	-	0.023	0.023
Total CDFG Resource Impacts	*0.127*	*0.388*	*0.515*
RWQCB Resources			
Waters of the U.S/State†	0.127	0.388	0.515
TOTAL RWQCB Resource Impacts	*0.127*	*0.388*	*0.515*

*Includes CDFG streambed.
**Includes ACOE wetland and overlaps with ACOE non-wetland waters.
†Includes CDFG and ACOE jurisdiction.

4.1.4.4. MITIGATION

For impacts to waters of the U.S., a minimum 1:1 mitigation ratio of creation of similar habitat would be required (see Table 8). Temporary wetland impacts may be mitigated by habitat replacement or enhancement, which may include the removal of any non-native species. All mitigation for state and federal waters is subject to the approval of the regulatory agencies.

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Study Area
Permanent Impacts
Temporary Impacts
Dirt Driveways
ACOE Non-wetland Waters of the US
ACOE Wetland
Soil Test Pits

0 Feet 100

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FIGURE 9A
Impacts to Existing ACOE Jurisdictional Waters
within the Lawson Valley Road Bridge Project Study Area

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FIGURE 9B
Impacts to Existing CDFG Jurisdictional Waters
within the Lawson Valley Road Bridge Project Study Area

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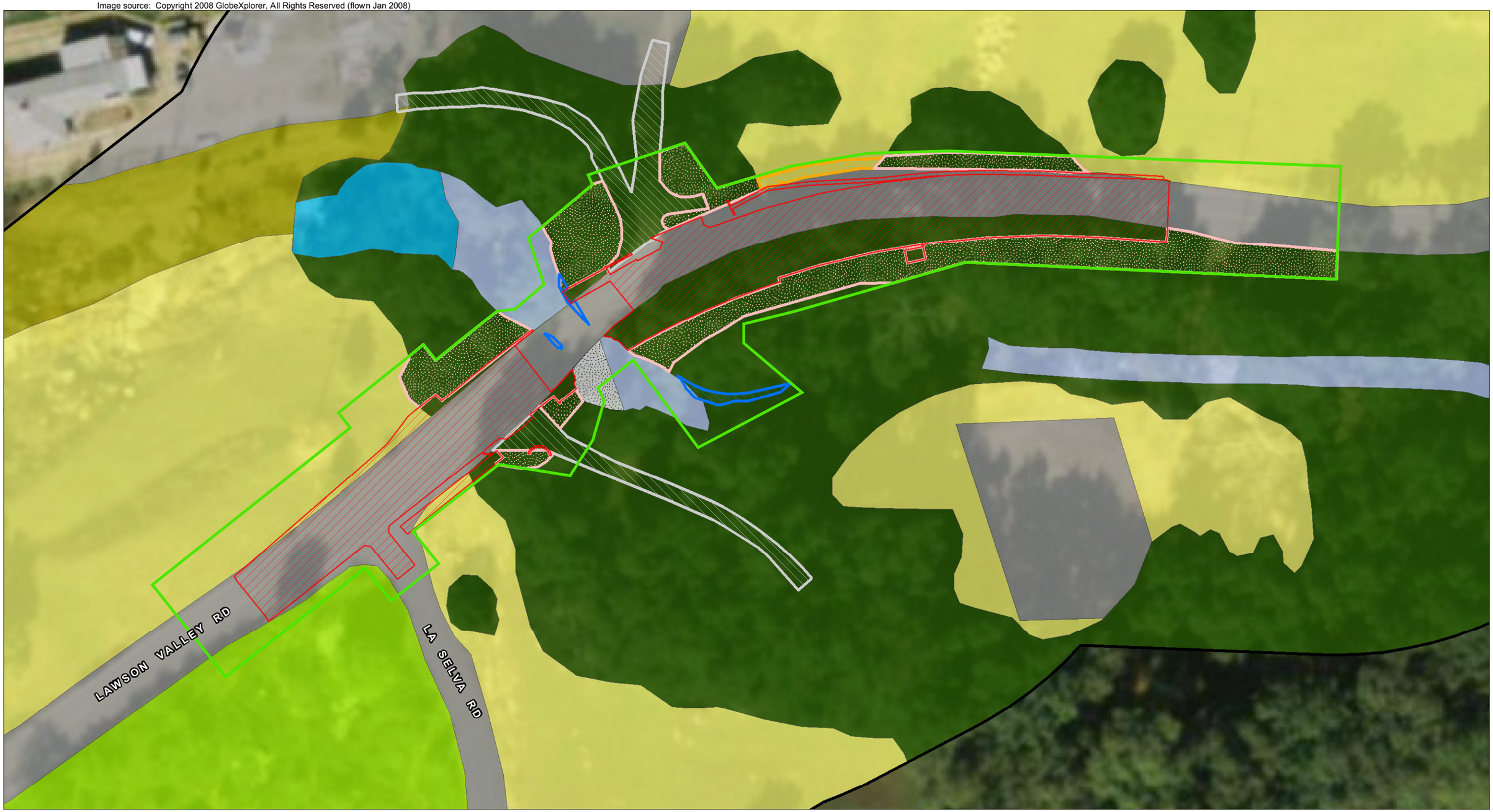

Study Area
Project Impact Area
Permanent Impacts
Dirt Driveways

Proposed On-site Mitigation

Coast Live Oak Riparian Forest Enhancement (0.254 ac)
Native Grassland Restoration (0.008 ac)
Proposed Project Channel Widening (ACOE non-wetland waters mitigation; 0.008 ac)

Vegetation Type and Land Cover

Coastal Sage Scrub
Coast Live Oak Riparian Forest
Non-native Grassland
Southern Mixed Chaparral
Southern Willow Scrub
Freshwater Marsh
Bare Ground
Developed

0 Feet 50

RECON

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FIGURE 10
Proposed On-site Mitigation within the
Lawson Valley Road Bridge Project Impact Area

Mitigation for impacts to CDFG riparian/RWQCB jurisdictional areas (coast live oak riparian forest and southern willow scrub) is discussed above in Sections 4.1.1.4 and 4.1.2.4, and mitigation for impacts to ACOE wetland/CDFG riparian/RWQCB jurisdictional areas (southern willow scrub) is discussed above in Section 4.1.2.4.

Temporary impacts to ACOE non-wetland waters and CDFG streambed will be mitigated on-site through restoration of all temporarily impacted areas to pre-impact contours and vegetation (see Chapter 6).

Permanent impacts to ACOE non-wetland waters will be mitigated on-site through creation. The proposed project will result in widening of the streambed beneath and upstream of the bridge. This will provide approximately 0.008 acre of on-site creation of ACOE non-wetland waters/CDFG streambed, which would account for the required 0.005 acre of mitigation for impacts to ACOE non-wetland waters and provide an additional 0.003 acre of ACOE non-wetland waters/CDFG streambed creation. This area is shown as "Proposed Project Channel Widening" on Figure 10.

4.2. Special Status Plant Species

No state or federally listed plant species occur in the study area. However, one plant species considered sensitive by CNPS, San Diego sagewort, occurs within the PIA. This section describes San Diego sagewort located within the PIA, anticipated impacts, and proposed avoidance, minimization, and mitigation measures.

4.2.1. Discussion of San Diego Sagewort Impacts and Mitigation

4.2.1.1. Survey Results

One San Diego sagewort individual was observed upstream adjacent to Lawson Valley bridge during 2003 and 2005 surveys. The shrub was not observed during 2008 surveys.

4.2.1.2. Avoidance and Minimization Efforts

Due to proximity to the San Diego sagewort to the bridge, impacts to this one plant are unavoidable.

4.2.1.3. Project Impacts

One San Diego sagewort plant will be impacted by project implementation (see Figure 8). Given the low sensitivity status of San Diego sagewort (CNPS List 4), impacts to this species are not adverse. As this species is known to occur within one mile of the survey

area within the same watershed, the proposed project is not anticipated to impact the regional long-term survival of the species (State of California 2009c).

4.2.1.4. COMPENSATORY MITIGATION

This species will be included in the seed and container stock palette for restoration efforts that will occur during post-construction.

4.2.1.5. CUMULATIVE EFFECTS

Inclusion of this species in the on-site restoration efforts completed during post-construction will adequately mitigate for the loss of the single individual plant removed by project implementation. Removal of this individual will not contribute to the overall decline of the species regional population.

4.3. Special Status Animal Species Occurrences

There will be a total temporary loss of 0.492 acre of coast live oak riparian forest and southern willow scrub habitat for potentially occurring wildlife species such as Cooper's hawk, Coronado skink, and coastal western whiptail. Because permanent impacts will be mitigated on-site, the permanent impact totals are included as part of the total temporary loss of habitat for wildlife. This section describes sensitive wildlife species observed/detected or with high potential to occur within the PIA, anticipated impacts, and proposed avoidance, minimization and mitigation measures.

4.3.1. Discussion of Sensitive Reptile Species Impacts and Mitigation

4.3.1.1. SURVEY RESULTS

Coronado skink and coastal western whiptail have a high potential to occur within the PIA due to the presence of suitable oak riparian forest.

4.3.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

The identified PIA is the minimum area required to construct the proposed project. Project features, including locations of staging areas and access road, have been located and designed to minimize impacts to sensitive biological resources, including sensitive vegetation communities that provide habitat for reptile species such as Coronado skink and coastal western whiptail.

4.3.1.3. PROJECT IMPACTS

The grading and construction activities associated with the proposed project will potentially result in impacts to reptile species, including Coronado skink and coastal western whiptail. However, as much of the ground disturbance is taking place within and

immediately adjacent to the existing paved road, the impacts will disturb a small amount of habitat (i.e., total project impacts total 1.144 acre) and are expected to impact a small number of individuals. Therefore, impacts to Coronado skink and coastal western whiptail are not anticipated to impact survival of localized populations.

4.3.1.4. COMPENSATORY MITIGATION

The proposed habitat based mitigation, discussed in Section 4.1. above, would offset potential direct impacts to Coronado skink and coastal western whiptail.

4.3.1.5. CUMULATIVE EFFECTS

As the proposed project would not result in adverse effects to these species, and the proposed habitat mitigation would further offset potential impacts, the proposed project would not contribute to a potential cumulative impact to Coronado skink or coastal western whiptail. Temporary and permanent impacts to suitable habitat for these species would be mitigated through on-site restoration.

4.3.2. Discussion of Cooper's Hawk Impacts and Mitigation

4.3.2.1. SURVEY RESULTS

Cooper's hawks were observed flying within the PIA during general surveys in June 2004, June 2005, and December 2008. No nesting was observed; however, there is a potential for this species to nest in the larger trees in the PIA and study area.

4.3.2.2. AVOIDANCE AND MINIMIZATION EFFORTS

To avoid potential impacts to any nesting raptor species and/or migratory birds, the following construction limitations shall apply:

- No construction will occur between February 1 and July 1; or
- If construction activities are proposed during the raptor breeding season (February 1 through July 1), a County-approved, qualified biologist will perform a survey to determine the presence or absence of nesting birds within 300 feet of the PIA and nesting raptors within 500 feet of the PIA to be completed not more than 10 days prior to initiation of construction activities, the results of which must be submitted to the County for review and approval prior to initiating construction; and
- If active raptor nests are identified during the preconstruction survey a biological monitor shall be present on-site as necessary during construction; and
- The biological monitor shall ensure that perimeter construction fencing is being maintained to minimize construction impacts and ensure that no nest containing eggs

or chicks is ”taken”, as defined by the MBTA or Fish & Game Code Section 86, until all young have fledged or the nest becomes inactive.

4.3.2.3. PROJECT IMPACTS

With the above avoidance and minimization measures, the proposed project would avoid impacts to nesting raptors. Temporary impacts to suitable raptor foraging habitat would occur as a result of the proposed project during active construction within the non-native grasslands. However, this would not result in adverse impacts to the Cooper’s hawk, as impacts to this species’ habitat will be mitigated on-site.

4.3.2.4. COMPENSATORY MITIGATION

With the above avoidance and minimization measures, the proposed project would avoid impacts to Cooper’s hawk and would, therefore, not require additional mitigation.

4.3.2.5. CUMULATIVE EFFECTS

As the proposed project would not result in impacts to this species, it would not contribute a potential cumulative impact. Temporary and permanent impacts to suitable nesting and foraging habitat for this species would be mitigated on-site as discussed in Section 4.1.

4.3.3. Discussion of Common Raptors Impacts and Mitigation

Active raptor nests are protected by CDFG Code and the Migratory Bird Treaty Act. No active raptor nests were observed within the PIA during the 2008 survey; however, there is a potential for raptor species to nest in the larger trees in the PIA and study area.

4.3.3.1. SURVEY RESULTS

Red-tailed hawks were observed nesting in a coast live oak tree just outside the PIA in 2003 and 2005 (see Figures 5 and 8). This species was not observed during updated vegetation and wetland delineation efforts in December 2008; however, this survey was conducted prior to the typical nesting period for raptor species. Suitable nesting habitat for red-tailed hawks and other raptors, including white-tailed kites (*Elanus leucurus*), exists within and adjacent to the PIA.

4.3.3.2. AVOIDANCE AND MINIMIZATION EFFORTS

To avoid potential impacts to any nesting raptor species and/or migratory birds, the following construction limitations shall apply:

- No construction will occur between February 1 and July 1; or

- If construction activities are proposed during the raptor breeding season (February 1 through July 1) a County-approved, qualified biologist will perform a survey to determine the presence or absence of nesting birds within 300 feet of the PIA and nesting raptors within 500 feet of the PIA to be completed not more than 10 days prior to initiation of construction activities, the results of which must be submitted to the County for review and approval prior to initiating construction; and
- If active raptor nests are identified during the preconstruction survey a biological monitor shall be present on-site as necessary during construction; and
- The biological monitor shall ensure that perimeter construction fencing is being maintained to minimize construction impacts and ensure that no nest containing eggs or chicks is ”taken”, as defined by the MBTA or Fish & Game Code Section 86, until all young have fledged or the nest becomes inactive.

4.3.3.3. PROJECT IMPACTS

With the above avoidance and minimization measures, the proposed project would avoid impacts to nesting raptors. Temporary impacts to suitable raptor foraging habitat would occur as a result of the proposed project. However, this would not result in adverse impacts to the red-tailed hawk, as impacts to this species’ nesting and foraging habitat will be mitigated.

4.3.3.4. COMPENSATORY MITIGATION

With the above avoidance and minimization measures, the proposed project would avoid impacts to raptors and would, therefore, not require additional mitigation.

4.3.3.5. CUMULATIVE EFFECTS

As the proposed project would not result in impacts to this species, it would not contribute a potential cumulative impact. Temporary and permanent impacts to suitable nesting and foraging habitat for this species would be mitigated on-site as discussed in Section 4.1.

Chapter 5. Results: Permits and Technical Studies for Special Laws or Conditions

5.1. Federal Endangered Species Act Consultation Summary

Suitable habitat was determined not to exist within the PIA for federally listed endangered species, including arroyo toad, least Bell's vireo, or southwestern willow flycatcher. In addition, no arroyo toads were detected during focused surveys conducted in 2006 and 2008. Therefore, no Federal Endangered Species Act Consultation has occurred.

Focused surveys for arroyo toad were conducted following correspondence with USFWS and the Department.

5.2. Federal Fisheries and Essential Fish Habitat Consultation Summary

No federal endangered species consultation with the National Marine Fisheries is required for this project, as no federally endangered fish species are expected to occur within the study area.

5.3. California Endangered Species Act Consultation Summary

Suitable habitat was determined not to exist within the PIA for the state endangered species, including least Bell's vireo. Therefore, no California Endangered Species Act Consultation is required.

5.4. Wetlands and Other Waters Coordination Summary

As the proposed project would result in impacts to resources under the jurisdiction of the ACOE, CDFG, and RWQCB, the following permits/approvals will be required: A 404 Nationwide Permit (which may include #14 Linear Transportation Crossing, #25 Structural Discharges, and #33 Temporary Construction Access and Dewatering) from the ACOE, a Streambed Alteration Agreement from the CDFG, and a 401 Water Quality Certification from the RWQCB.

5.5. Invasive Species

In accordance with Executive Order 13112 (Invasive Species), the proposed project will not result in the introduction or spread of invasive plant or wildlife species. This project does not require use of landscape plantings, and the only planting proposed will be limited to native species, as it will be associated with mitigation for native habitat impacts. However, multiple invasive plant species have been identified within the project survey area, including hottentot fig, foxtail chess, and short-mustard, and soil disturbance resulting from the project may encourage the establishment of existing invasive species. Invasive exotic species will be controlled within enhancement and restoration areas as described in the restoration efforts outlined in Chapter 6.

Chapter 6. Restoration

On-site restoration of temporarily impacted areas within the PIA will be conducted after construction is complete. A restoration plan will be prepared in cooperation with the DPW and the wildlife agencies to address restoration, management, and monitoring of upland (i.e., native/non-native grassland) and riparian/wetland (i.e., coast live oak riparian forest and southern willow scrub) restoration areas.

Mitigation for impacts to non-native grassland will occur in the form of native grassland restoration. Non-native grassland is expected to readily recover from temporary impacts that do not require excavation or root-grubbing. Seeding with native grasses and annual plant species and weeding before and after seeding may be used to encourage the native components within the recovering grassland. Within areas proposed for excavation or fill, topsoil may be salvaged before construction begins and redistributed following completion of construction. Restoration sites will be seeded with native annual plant species and native grasses that are known from the area, such as those presented in Table 10. The area proposed for native grassland restoration is shown in Figure 10.

TABLE 10
RECOMMENDED PLANT MATERIAL FOR NATIVE GRASSLAND

Species
Blue dicks (*Dichelostemma capitatum*)
Herba impia (*Filago* sp.)
Four-spot (*Clarkia purpurea* ssp. *quadrivulnera*)
Popcornflower (*Plagiobothrys* sp.)
Purple needlegrass (*Nassella pulchra*)

NOTE: These recommendations are guidelines that may be changed due to a variety of circumstances, including the need to reflect the reference area composition and the amount of natural habitat that is being lost.

The riparian restoration plan will contain numerous elements, as detailed below.

6.1. Riparian Terrace Design

Within drainages there are lateral zones called terraces. These zones or terraces have various hydrological regimes that cause the vegetation to be stratified and a range of hydrologic conditions that determine the particular vegetation assemblages that establish. Important hydrological factors include water duration and velocity, width and elevation of the floodplain, frequency of disturbance, susceptibility to flood damage and scouring, and depth to the water table. These factors are directly related to a particular terrace's position relative to the center of the stream flow and determine the location, structure, and composition of a particular habitat type. Within different stream systems either one or all of the terraces may be incorporated into the restoration design. The design will be based on restored hydrological patterns. The four terraces and associated plant communities are described below.

6.1.1. Low Terrace

The low terrace is closest to the stream where the land is inundated semi-permanently and is subject to frequent storm flows during the rainy season (November–March). Narrow-leaved willow (*Salix exigua*) and arroyo willow should be planted in this zone, as they are able to withstand rapid water flows and long periods of inundation. In addition, during the growing season, willows can develop a deep root system that anchors them during storm events. The understory, if planted, should consist of a few aquatic plant species adapted to disturbance conditions. Stability of a stream depends primarily on the ability of vegetation to form vigorous deep roots that reduce the high erosion potential in this zone.

6.1.2. Upper Terrace

The upper terrace is rarely subject to flood events and storm-related disturbances are low. Trees reach their most mature growth in this terrace due to the low disturbance level and high water table. As trees mature they develop extensive root systems that can withstand fluctuating water tables. California sycamore and coast live oak planted to eventually form a contiguous canopy layer would be appropriate to plant in this zone. The secondary layer (to grow under the trees) should be relatively open with a few facultative wetland shrub species. The understory consists of a mixture of native perennial grasses, annual flowering plants, and herbaceous species.

6.1.3. Freshwater Marsh in Drainage Bottom

Freshwater marsh systems consist mostly of low-growing herbaceous plants and grasses. Shrubs and trees are few to sparse but may occur on the outskirts of the marsh areas. Marshes can develop on a wide variety of soil types from clays to sandy loams. Two types of freshwater marshes (perennial freshwater marsh and seasonal freshwater marsh) could be appropriate for the wetland restoration and creation sites depending on specific soil characteristics and hydrology (depth and duration of inundation).

A perennial freshwater marsh will likely be appropriate for the wettest areas of the wetland restoration/creation sites. This plant community consists of aquatic species that have adapted to permanent inundation; therefore, the site should pond water almost year-round. Common species include cattails (*Typha* sp.) and bulrush (*Scirpus californicus*). A seasonal marsh habitat can be created/restored where water is at or near the soil surface during the growing season (April through September). Plant diversity and abundance is high with common wetland plants including spiny rush (*Juncus acutus*) and sedge (*Carex* sp.).

6.2. Site Preparation

General methods for site preparation include:

- **Weed Eradication.** This can be accomplished in one of three ways. The method used at each habitat restoration site will be determined by access to the site and the weediness of the soil. The three methods of eradicating weeds from a restoration site are: removal of weedy soil, herbicide treatment; and hand weeding.
- **Topsoil and Salvaged Plant Translocation Plan.** Plants available for salvage will be removed under the direction of the habitat restoration specialist and planted

immediately on a prepared restoration site or stored at an appropriate location and cared for until the restoration site is prepared. All areas with high-quality topsoil will be clearly staked by the habitat restoration specialist who will then meet with the project engineer and grading contractor to discuss issues related to topsoil salvage. Placing cobbles in the wetland restoration sites will help stabilize the streambed and will provide crevices where seeds can lodge and germinate along the water's edge. During grading, cobbles should be salvaged from floodplain and wetland transition zones slated for development. Cobbles can be separated with a cobble-separator. Cobbles may be moved directly to wetland restoration sites or stock piled in scraped areas (free of weeds).

- **Container Plant Production.** If propagated plants are specified, container plant production can begin as locally collected seed becomes available. Container plants will be inoculated with mycorrhizae (mutualistic fungi), by using native soil that contains the fungi and other microorganisms. Providing the necessary microorganisms can increase outplanted seedling survival rates (Allen 1988).
- **Irrigation.** Wetland plants require consistent watering during the first one to two years of growth. With southern California's highly unpredictable rainfall pattern it is often necessary to include irrigation in areas where wetland habitat is to be restored. Irrigation will help ensure the survival and growth of newly installed plants.

6.3. Planting and Seeding Specifications

Planting specifications include the collection and application of native seed mixes and the production and planting of willow cuttings, container plants, and salvaged material.

- **Native Seed Collection.** Native seed will be collected in and around the PIA, as directed by the project's habitat restoration specialist. Seed collection areas will be limited to a 15-mile radius around the PIA to the maximum extent possible.
- **Seed Application Methods.** The wetland restoration sites will be seeded with locally collected native species to the maximum extent possible. Seed may be applied using various techniques including land imprinting, hydroseeding, or hand seeding depending on the specific site conditions, amount of seed available, and species to be used for specific restoration projects.
- **Plant Production.** Container plants can be produced at an off-site nursery. The nursery must specialize in producing high-quality native plant species for habitat restoration projects. Plant production will begin as seed becomes available. Native soil will be used in the plant containers. If more native soil is needed than is available to fill plant containers, each container should receive some native soil

mixed with an appropriate commercial soil mix. The native soil provides mycorrhizae (fungi) and other microorganisms that enhance native plant growth.

- **Timing.** Planting should be done during November through March.

6.4. Planting Design

Possible wetland habitats to be restored within the PIA are: southern willow scrub in the lower terraces, oak forest in the upper terraces, and freshwater marsh in the bottom of the drainages. The planting design presented below will be applied to areas designated as "coast live oak riparian forest enhancement" within the on-site mitigation areas presented on Figure 10.

6.4.1. Southern Willow Scrub in the Lower Terraces

The southern willow scrub creation area can be planted with several willows, including narrow-leaved willow, red willow (*Salix laevigata*), and arroyo willow (Table 11). To diversify the shrub layer, mule fat liners and/or cuttings and San Diego sagewort or Douglas mugwort from one-gallon container stock should be planted randomly between willow groupings.

TABLE 11
RECOMMENDED PLANT MATERIAL FOR SOUTHERN WILLOW SCRUB

Species	Size	Density (plants/acre)
Arroyo willow (*Salix lasiolepis*)	1-gallon/cuttings	75
Black willow (*Salix gooddingii*)	1-gallon/cuttings	50
Mule fat (*Baccharis salicifolia*)	4-inch/cuttings	50
Narrow-leaved willow (*Salix exigua*)	1-gallon/cuttings	50
Red willow (*Salix laevigata*)	1-gallon/cuttings	25
San Diego sagewort (*Artemisia palmeri*) or Douglas mugwort (*Artemisia douglasiana*)	1-gallon	50
TOTAL		300

NOTE: These recommendations are guidelines that may be changed due to a variety of circumstances, including the need to reflect the reference area composition and the amount of natural habitat that is being lost.

6.4.2. Riparian Forest in the Upper Terrace

Table 12 lists plant material recommended for riparian forest restoration areas. Riparian forest should consist of groupings of ten container plants (approximately five western sycamores and five coast live oaks) per grouping. Bunch grasses will be clumped in groups of 15 to 25 within the tree openings. California rose will be planted in clusters of three to five between trees.

TABLE 12
RECOMMENDED PLANT MATERIAL FOR RIPARIAN FOREST

Species	Size	Density (plants/acre)
Coast live oak (*Quercus agrifolia*)	5-gallon	40
Western sycamore (*Platanus racemosa*)	5-gallon	40
Purple needlegrass (*Nassella pulchra*)	1-gallon	200
California rose (*Rosa californica*)	1-gallon	50
TOTAL		280

NOTE: These recommendations are guidelines that may be changed due to a variety of circumstances, including the need to reflect the reference area composition and the amount of natural habitat that is being lost.

6.4.3. Freshwater Marsh in the Drainage Bottoms

The recommended plant species, container size, and density for freshwater marsh are shown in Table 13. The wettest areas within the freshwater marsh restoration areas shall be planted with cattails and bulrush while the drier areas shall be planted with rush (*Juncus* sp.). Liners shall be placed in groups of 10–15 individuals with about one foot between the plants. The one-gallon container stock shall be placed in groupings of five to ten individuals approximately two to three feet on center.

TABLE 13
RECOMMENDED PLANT MATERIAL FOR FRESHWATER MARSH

Species	Size	Density (plants/acre)
Bulrush (*Scirpus americanus*)	liners	100
Cattails (*Typha* sp.)	liners	50
Rush (*Juncus* sp.)	1-gallon	100
TOTAL		300

NOTE: These recommendations are guidelines that may be changed due to a variety of circumstances, including the need to reflect the reference area composition and the amount of natural habitat that is being lost.

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APPENDICES

Appendix A Request for Candidate, Proposed, Threatened, or Endangered Species List for the Proposed Lawson Valley Road Bridge Project, San Diego County, California

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road
Carlsbad, California 92009

In Reply Refer To:
FWS-SDG-3516.1

JUN 1 1 2003

Mr. Chris White
Chief, Environmental Resource Studies
Caltrans, District 11
PO Box 85406
San Diego, California 92186-5406

Attn: Debbie MacAller

Re: Request for Candidate, Proposed, Threatened, or Endangered Species List for the Proposed Lawson Valley Road Bridge Project, San Diego County, California

Dear Mr. White:

The U.S. Fish and Wildlife Service (Service) has reviewed the information provided in your May 12, 2003, letter to assess the potential presence of federally listed threatened, endangered, or proposed species at the proposed project site. We do not have site specific information for your project area. However, to assist you in evaluating whether or not the proposed project may affect listed species, we are providing the attached list of species that occur in the general project area. We recommend that you seek assistance from a biologist familiar with your project site, and with the listed species to assess the potential for direct, indirect, and cumulative effects likely to result from the proposed activity. You should also contact the California Department of Fish and Game for State-listed and sensitive species that may occur in the area of the proposed project. Please note that State-listed species are protected under the provisions of the California Endangered Species Act.

If it is determined that the proposed project may affect a listed or proposed species, or the designation of any critical habitat, you should request initiation of consultation (or conference for proposed species) with the Service pursuant to section 7 of the Endangered Species Act of 1973, as amended (Act). Informal consultation may be used to exchange information and resolve conflicts with respect to listed species prior to a written request for formal consultation.

Should you have any questions regarding the species listed or your responsibilities under the Act, please call John DiGregoria of my staff at (760) 431-9440.

Sincerely,

for Peter C. Sorensen
Acting Assistant Field Supervisor

Enclosure

Listed Endangered, Threatened and Proposed Species
that may occur in the vicinity of the Lawson Valley Road Bridge
in San Diego County, California

Common Name	Scientific Name	Status
BIRDS		
southwestern willow flycatcher	*Empidonax traillii extimus*	E
least Bell's vireo	*Vireo bellii pusillus*	E
AMPHIBIANS		
arroyo toad	*Bufo californicus*	E
PLANTS		
San Diego ambrosia	*Ambrosia pumila*	E

E=Endangered

Appendix B Plant Species Observed on the Lawson Valley Bridge Replacement Site

APPENDIX B
PLANT SPECIES OBSERVED ON THE LAWSON VALLEY BRIDGE REPLACEMENT SITE

Scientific Name	Common Name	Habitat	Origin
Amblyopappus pusillus Hook. & Arn.	Pineapple weed	SMC,RF	N
Ambrosia psilostachya DC.	Western ragweed	FM, RF	N
Anagallis arvensis L.	Scarlet pimpernel, poor-man's weatherglass	SMC, RF	I
Artemisia californica Less.	California sagebrush	NNG	N
Artemisia douglasiana	Mugwort	FM	N
Artemisia palmeri A. Gray	San Diego sagewort, Palmer sagewort	FM	N
Avena fatua L.	Wild oat	NNG	I
Baccharis pilularis DC.	Coyote bush	D	N
Baccharis salicifolia (Ruiz Lopez & Pavón) Pers.	Mule fat, seep-willow	FM	N
Brassica nigra (L.) Koch.	Black mustard	NNG, RF	I
Bromus diandrus Roth.	Ripgut grass	NNG, RF	I
Bromus madritensis L. ssp. *rubens* (L.) Husnot	Foxtail chess	NNG, RF	I
Cardionema ramosissimum (Weinm.) Nelson & J.F. Macbr.	Tread lightly	SMC, D	N
Carpobrotus edulis (L.) Bolus.	Hottentot fig	D	I
Ceanothus sp.	Ceanothus	SMC	N
Chenopodium album L.	Lamb's quarters, pigweed	SMC	I
Circium occidentale (Nutt.)	Cobweb thistle	FM	I
Clarkia purpurea (Curt.) Nelson & J.F. Macbr. ssp. *quadrivulnera* (Dougl. in Lindl.) Lewis & Lewis	Four-spot	D, SMC	N
Claytonia perfoliata Willd.	Miner's lettuce	RF	N
Cotula coronopifolia L.	Brass-buttons	RF	I
Cyperus alternifolius L.	Umbrella sedge	FM	I
Datura wrightii Regel	Jimson weed	NNG	N
Dichelostemma capitatum Alph. Wood	Blue dicks	RF, SMC	N
Digitaria sanguinalis (L.) Scop.	Crabgrass	RF	I
Eleocharis sp.	Spikerush	NNG, FM	N
Eriogonum fasciculatum Benth. var. *foliolosum* (Nutt.) Abrams	California buckwheat	SMC	N
Erodium cicutarium (L.) L. Her.	White-stemmed filaree	RF	I
Eucalyptus sp.	Eucalyptus	FM	I
Filago sp.	Herba impia	NNG	N
Galium aparine L.	Goose grass	SMC, RF	I
Geranium sp.	Geranium	RF	I
Hirschfeldia incana (L.) Lagr.-Fossat	Short-pod mustard	NNG	I
Hordeum jubatum L.	Foxtail barley	NNG	N
Hypochaeris glabra L.	Smooth cat's-ear	NNG	I
Juncus sp.	Rush	FM	N
Juncus xiphiodes E. Meyer	Iris-leaved rush	FM	N
Keckiella cordifolia (Benth.) Straw	Climbing penstemon	RF	N
Lactuca serriola L.	Prickly lettuce	RF	I

APPENDIX B
PLANT SPECIES OBSERVED ON THE LAWSON VALLEY BRIDGE REPLACEMENT SITE
(continued)

Scientific Name	Common Name	Habitat	Origin
Lythrum californicum Torrey & A. Gray	California loosestrife	RF, FM	N
Melilotus indica (L.) All.	Sourclover	RF	I
Mimulus guttatus DC.	Common monkeyflower	RF	N
Oenothera elata Kunth ssp. *hirsutissima* (S. Watson) W. Dietr.	Tall yellow evening primrose	FM	N
Opuntia littoralis (Engelm.) Cockerell.	Shore cactus	D	N
Pinus sp.	Pine	RF	I
Plagiobothrys sp.	Popcornflower	RF	N
Platanus racemosa Nutt.	Western sycamore	RF	N
Polypogon monspeliensis (L.) Desf.	Annual beard grass	FM	I
Quercus agrifolia Nee	Coast live oak	RF	N
Raphanus sativus L.	Radish	SMC, RF	I
Rhamnus crocea Nutt.	Spiny redberry	SMC	N
Rosa californica C. & S.	California rose	RF	N
Rorippa nasturtium-aquaticum (L.) Hayek	Water cress	FM	I
Rumex salicifolius Weinm.	Willow dock	FM	N
Salix gooddingii C. Ball.	Goodding's black willow	FM	N
Salix laevigata Bebb.	Red willow	FM	N
Salix lasiolepis Benth.	Arroyo willow	FM	N
Salsola tragus L.	Russian thistle, tumbleweed	NNG, D	I
Salvia apiana Jepson	White sage	D	N
Sambucus mexicana C. Presl	Blue elderberry	NNG	N
Scirpus americanus Pers.	Three-square	FM	N
Scirpus microcarpus C. Presl	Small-fruited bulrush	FM	N
Sonchus asper (L.) Hill ssp. *asper*	Prickly sow thistle	SMC, RF	I
Symphoricarpos mollis Nutt.	Creeping snowberry, trip vine	RF	N
Toxicodendron diversilobum (Torrey & A. Gray) E. Greene	Western poison oak	RF	N
Typha latifolia L.	Broad-leaved cattail	FM	N
Urtica dioica L. ssp. *holosericea* (Nutt.) Thorne	Hoary nettle	RF	N
Vitis girdiana Munson	Wild grape	RF	N
Xanthium strumarium L.	Cocklebur	FM, RF	N

HABITATS

SMC = Southern mixed chaparral
RF = Coast live oak riparian forest
FM = Freshwater marsh
NNG = Non-native grassland
D = Developed

OTHER TERMS

N = Native to locality
I = Introduced species from outside locality

Appendix C Wildlife Species Observed on the Lawson Valley Bridge Replacement Site

APPENDIX C
WILDLIFE SPECIES OBSERVED ON THE
LAWSON VALLEY BRIDGE REPLACEMENT SITE

Common Name	Scientific Name	Occupied Habitat	Evidence of Occurrence
Invertebrates (Nomenclature from Mattoni 1990 and Opler and Wright 1999)			
Cabbage white	*Pieris rapae*	NNG	O
Common or checkered white	*Pieris protodice*	RF	O
West coast lady	*Vanessa annabella*	FM	O
California sister	*Adelpha bredowii*	RF	O
Acmon blue	*Plebejus acmon acmon*	NNG	O
Amphibians (Nomenclature from Crother 2001)			
Pacific treefrog	*Hyla regilla*	C	O
California treefrog	*Hyla californica*	C	O, V
Western toad	*Bufo boreas*	C	O
Reptiles (Nomenclature from Crother 2001)			
Western fence lizard	*Sceloporus occidentalis*	RF	O
San Diego gopher snake	*Pituophis catenifer annectens*	C	O
California striped racer	*Maticophis lateralis*	RF	O
Birds (Nomenclature from American Ornithologists' Union 1998)			
Red-tailed hawk	*Buteo jamaicensis*	RF, F	O, N
Cooper's hawk	*Accipiter cooperii*	RF	V
California quail	*Callipepla californica californica*	NNG	V
Mourning dove	*Zenaida macroura marginella*	RF, D	O
Rock dove	*Columbina livia*	RF	O
Costa's hummingbird	*Archilochus costae*	RF	O
Anna's hummingbird	*Calypte anna*	RF	O, N
Acorn woodpecker	*Melanerpes formicivorus bairdi*	RF	O
Nuttall's woodpecker	*Dendrocopos nuttallii*	RF	O
Northern flicker	*Colaptes auratus*	RF	O
Pacific slope flycatcher	*Empidonax difficilis*	RF	O
Ash-throated flycatcher	*Myiarchus cinerascens cinerascens*	RF	O
Black phoebe	*Sayornis nigricans semiatra*	RF	O
Northern rough-winged swallow	*Stelgidopteryx serripennis*	F	O, N
Western scrub-jay	*Aphelocoma californica*	NNG	O
American crow	*Corvus brachyrhynchos hesperis*	F	O
Common raven	*Corvus corax clarionensis*	RF	O
Bushtit	*Psaltriparus minimus minimus*	RF	O
Bewick's wren	*Thyromanes bewickii*	RF	O
House wren	*Troglodytes aedon parkmanii*	RF	O
Northern mockingbird	*Mimus polyglottos polyglottos*	SMC	O
Western bluebird	*Sialia mexicana occidentalis*	NNG	O
Wrentit	*Chamaea fasciata henshawi*	RF	V
Phainopepla	*Phainopepla nitens lepida*	RF	O
American goldfinch	*Carduelis tristis salicamans*	RF	O
Lesser goldfinch	*Carduelis psaltria hesperophilus*	RF	O
Lawrence's goldfinch	*Carduelis lawrencei*	RF	O
House finch	*Carpodacus mexicanus frontalis*	RF	O
Orange-crowned warbler	*Vermivora celata*	RF	O
Spotted towhee	*Pipilo maculatus*	RF, SMC	O
California towhee	*Pipilo crissalis*	SMC, RF	O
Song sparrow	*Melospiza melodia*	NNG	O

APPENDIX C
WILDLIFE SPECIES OBSERVED ON THE LAWSON VALLEY BRIDGE REPLACEMENT SITE
(continued)

Common Name	Scientific Name	Occupied Habitat	Evidence of Occurrence
Hooded oriole	*Icterus cucullatus nelsoni*	RF, NNG	O
Mammals (Nomenclature from Jones *et al*. 1997)			
California ground squirrel	*Spermophilus beecheyi*	RF, SMC	O
Southern pocket gopher	*Thomomys umbrinus (= bottae)*	RF	B
Cottontail rabbit	*Sylvilagus audubonii*	RF	O
Coyote	*Canis latrans*	D	T
Introduced Species			
European starling	*Sturnus vulgaris*	RF	O

*Observed by Varanus (2000).

Habitats
C = Streambed
D = Developed
NNG= Non-native Grassland
RF = Coast Live Oak Riparian Forest
SMC= Southern mixed chaparral

Evidence of Occurrence
B = Burrow
N = Nest
O = Observed
T = Tracks
V = Vocalization

Appendix D Lawson Valley Road Bridge Replacement Emergency Repair Project Biological Survey and Wetland Delineation Technical Report

The 2008 Wetland Delineation has been incorporated into the *Natural Environmental Study for the Lawson Valley Road Bridge Project*, dated June 2009.

LAWSON VALLEY ROAD BRIDGE EMERGENCY REPAIR PROJECT BIOLOGICAL SURVEY AND WETLAND DELINEATION TECHNICAL REPORT SAN DIEGO COUNTY, CALIFORNIA

Prepared for:

San Diego County Department of Public Works
Environmental Services Unit
5471 Kearny Villa Road, Suite 300
San Diego, CA 92123

Prepared By:

HDR

January 2002

LAWSON VALLEY ROAD BRIDGE EMERGENCY REPAIR PROJECT
BIOLOGICAL SURVEY AND WETLAND DELINEATION TECHNICAL REPORT
SAN DIEGO COUNTY, CALIFORNIA

Prepared for:

County of San Diego Department of Public Works
Environmental Services Unit
5471 Kearny Villa Road, Suite 300
San Diego, CA 92123

Prepared by:

HDR Engineering Inc.
9444 Farnham Street, Suite 300
San Diego, CA 92123
858.712.8400

January 2002

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1.0 INTRODUCTION

1.1 INTRODUCTION AND PURPOSE

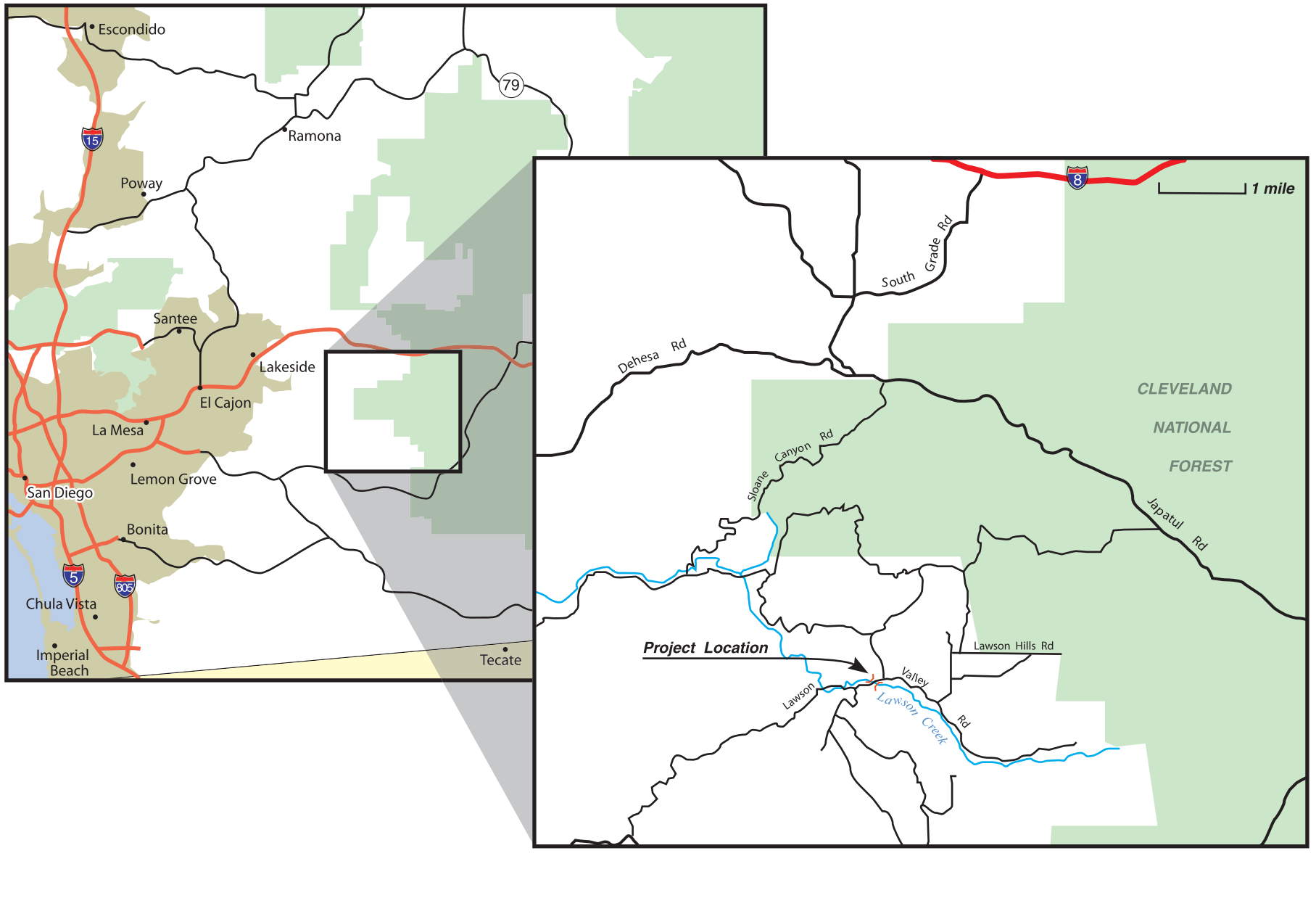
This report provides the results of a biological survey and wetland delineation performed for the Lawson Road Bridge Emergency Repair proposed for construction in the unincorporated community of Lawson Valley located in San Diego County (Figure 1 – Project Vicinity Map). The wetland delineation was performed in accordance with the United States Army Corps of Engineers (ACOE) 1987 manual and California Department of Fish and Game (CDFG) guidelines.

1.2 PROGRAM OVERVIEW

The proposed project involves the repair of the Lawson Valley Road Bridge. Currently, an abutment on the northeast side of the bridge is in danger of collapsing. This abutment has become unstable because a wood-wing-wall that once supported the embankment has been removed. Additionally, a vertical top portion of the abutment is cracking and in danger of causing further unstable conditions. Repairs are necessary immediately, as the bridge may collapse thus, cutting off the main exit for the volunteer fire station and Lawson Valley residents.

Emergency repairs will consist of stabilizing the area that is slumping with grouted rip-rap. To prevent the abutment from falling, bracing beams will be placed between the abutments. It is possible that 14" x 14" wood beams will be placed vertically along the damaged abutment to take the force of the bracing beams. To perform this work, a backhoe or similar equipment may be used in the creek bed, which is a layer of sand over bedrock.

A biological survey and wetland delineation was performed for the Lawson Valley Road Bridge Repair project on December 26, 2001, by Michael Powers of HDR Engineering, Inc., to determine the potential impacts on Federal and State Listed Sensitive Plant and Animal Species, ACOE jurisdictional waters of the United States, and CDFG wetlands.



HDR

FIGURE 1

Project Vicinity Map

San Diego County Department of Public Works
Lawson Road Bridge Emergency Repair Project
Biological Assesment & Wetland Delineation

2.0 REGULATORY OVERVIEW

This section describes the federal and state regulatory authority associated with delineating and managing ACOE jurisdictional waters of the United States and CDFG jurisdictional wetlands.

2.1 FEDERAL AUTHORITY

The ACOE is responsible for the issuance of permits for the placement of dredged or fill material into waters of the United States (waters) pursuant to Section 404 of the Clean Water Act (33 USC 1344). As defined by the Corps at 33 CFR 328.3(a)(3), waters are those that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; tributaries and impoundments to such waters; all interstate waters including interstate wetlands; and territorial seas. (Note: Based on the recent U.S. Supreme Court decision in Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers [2001], and guidance from the U.S. Army Corps of Engineers and U.S. Environmental Protection Agency [2001], the federal government no longer asserts jurisdiction over isolated waters and wetlands under Section 404 of the Clean Water Act based on the "migratory bird rule".) Further guidance on the issue of isolated wetlands and waters is expected (U.S. Army Corps of Engineers, 2001).

Under Corps and U.S. Environmental Protection Agency (EPA) regulations, wetlands are defined as: "*those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.*"

In non-tidal waters, such as the project site, the lateral extent of ACOE jurisdiction is determined by the ordinary high water mark (OHWM) which is defined as the: "*…line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."* (33 CFR 328[e]).

In cases where ACOE jurisdictional resources are present, agreements and permits under Section 404 of the Clean Water Act may be required prior to construction.

2.2 STATE AUTHORITY

Per Section 1600 of the CDFG code, CDFG is responsible for the issuance of permits for the placement of dredged or fill material into the waters of the United States (waters) as defined by the ordinary high water mark in usual circumstances. Agreements and permits under CDFG Code Section 1600 will be required prior to construction.

2.3 DETERMINATION METHODS

The federal government has prescribed methods for delineating waters and wetlands pursuant to the Clean Water Act. Determination of waters is based on definitions and descriptions at 33 CFR 328. Methods for delineating wetlands are detailed in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and requires that, under normal circumstances, an area must possess three technical criteria to qualify as a jurisdictional wetland. These criteria are the presence of hydrophytic vegetation, hydric soils, and wetland hydrological features.

The state government has prescribed methods for delineating waters and wetlands. The presence of one of the three criteria detailed in the Corps Wetland Delineation Manual is sufficient for CDFG to take jurisdiction over the jurisdictional waters of the U.S. in order to protect any rare wildlife that may be disturbed if the wetland is affected.

2.3.1 MATERIALS AND METHODS

Prior to the field delineation, HDR conducted a literature review to determine the general character of the proposed project site, and to identify potential areas of concern. Documents and resources reviewed included the following:

- Project site maps
- U.S. Geological Survey (USGS) 7.5 minute topographic maps of the Alpine quadrangle (Township 16S, Range 2E, Section 28)
- Soil surveys for San Diego County
- San Diego County List of Hydric Soils

The preliminary jurisdictional delineation was conducted on December 26, 2001, using the Routine Wetland Method described in the *1987 Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987). Delineation forms are provided in Appendix A of this report.

A biological resources field survey was conducted for the surrounding area to document dominant plants in the area, wildlife species present and overall environmental conditions. Figure 3 – Study Area Diagram, shows the general configuration of the project area and the location of biological resource features.

Vegetation

Hydrophytic vegetation is plant life that occurs in areas that are frequently flooded or have saturated soil for a prolonged duration. In accordance with ACOE methodology, for a site to display a positive wetland vegetation indicator, greater than 50 percent of the plant species at a sampling location must be classified as hydrophytic. At each of the sampling points, the dominant plants were identified to species using standard taxonomic references (Hickman, 1993). The hydrophytic status of each species was determined in accordance with the *National List of Plant Species that Occur in Wetlands* (Reed, 1988) as obligate (OBL), facultative-wetland (FACW), facultative (FAC), or upland (UPL). All categories except upland are considered hydrophytes.

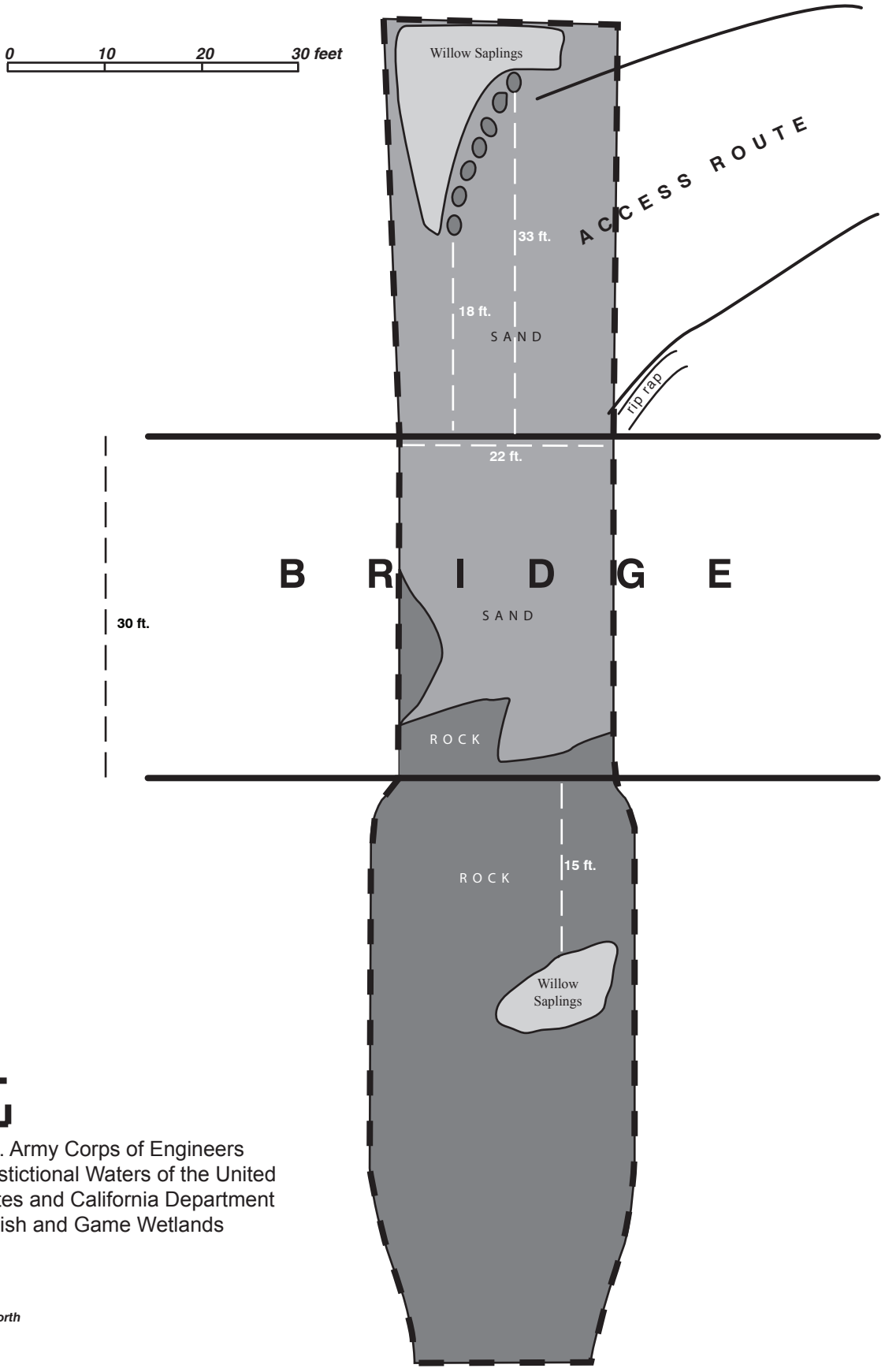


FIGURE 2

Lawson Bridge Schematic-Existing Conditions

San Diego County Department of Public Works

Lawson Road Brodge Emergency Repair Projects

Biological Assesment & Wetland Delineation

Soils

Soils were examined for the presence/absence of hydric characteristics (Environmental Laboratory, 1987; Hurt, et al., 1998). Soil pits were excavated to a depth of approximately 16 inches below ground surface (bgs). Samples were obtained from below the A-horizon (approximately 10 inches bgs). Because no organic soils were found, the samples were examined for redoximorphic properties of mineral soils, such as gleyed or mottled soil color, presence of iron or manganese concretions, low soil chroma, and/or presence of sulfidic material. After moistening the soil sample, the color was determined using Munsell soil color charts (Munsell Color, 1990). Soil texture was evaluated using field methods described by the ACOE (Environmental Laboratory, 1987). The characteristics of the soils were then compared against a description of the soil-mapping unit detailed in the *Soil Survey of San Diego County, California* (1973) for the project site.

Wetland Hydrology

Wetland hydrology characteristics of the sample points were evaluated by identifying evidence of inundation or free water, saturation, and/or oxidized root channels in the upper 12 inches of the soil.

3.0 FINDINGS

3.1 VEGETATION

The area of potential effect (APE) for the project includes the creek bed and upland areas surrounding the bridge. The creek bed underneath the bridge consists of a layer of sand over bedrock. The bedrock is exposed in one area beneath and to the south of the bridge. No vegetation is present beneath the bridge. The bedrock restricts the vegetative cover which is dominated by black willow (*Salix*) saplings, mule-fat (*Baccharis salicifolia*), and broad-leaved cattails (*Typha latifolia)* to an area 15 feet to the south of the bridge. The barren covering of sand over bedrock continues approximately 33 feet to the north of the bridge. This area is dominated by black willow saplings.

The project area is located in a Coast Live Oak Riparian habitat. The upland areas are dominated by coast live oaks (*Quercus agrifolia*). No sensitive plant species are present within the study area. Sensitive bird species such as the Cooper's hawk (*Accipiter cooperii*) may nest within a coast live oak riparian habitat; however, no nests or sensitive bird species were observed during the field survey (Appendix A).

The hydrophytic classification of dominant species occurring in the study area is shown in Table 1.

TABLE 1

DOMINANT PLANT SPECIES OBSERVED IN THE AREA OF POTENTIAL EFFECT

COMMON NAME	SCIENTIFIC NAME	GROWTH FORM[1]	WETLAND INDICATOR STATUS[2]	NATIVE STATUS[3]
ASTERACEAE				
Mule Fat	*Baccharis salicifolia*	S	FACW	I
FAGACEAE				
Coast Live Oak	*Quercus agrifolia*	T	NL	N
SALICACEAE				
Gooding's Black Willow	*Salix gooddingii*	S	OBL	N
TYPHACEAE				
Broad-leafed Cat-tail	*Typha latifolia*	S	OBL	N

FOOTNOTES FOR PLANT SPECIES

Table 1 contains a listing of the dominant species occurring in the study area based on hydrophytic classification.

GROWTH FORM

H	Herbaceous
G	Grass
S	Shrub
T	Tree
V	Vine

WETLAND INDICATOR STATUS

OBL	Obligate wetland species, occurs almost always in wetlands (>99% probability)
FACW	Facultative wetland species, usually found in wetlands (67-99% probability)
FAC	Facultative species, equally likely to occur in wetland and non-wetlands (34-66% probability)
FACU	Facultative upland species, not usually found in wetlands (1-33% probability)
UPL	Upland species, almost never found in wetlands (<1% probability)
NI	No indicator has been assigned due to a lack of information to determine Indicator status
NL	Not listed, assumed upland species
+ / -	Modifiers indicating greater or lesser affinity for wetland habitats

NATIVE SPECIES

N	Native
I	Introduced

3.2 SOILS AND WETLAND HYDROLOGY

The Soil Survey of San Diego County (Welch, 1973) identifies soil-mapping unit I-1 (19) Visalia sandy loam (VaB) at the project site. The I-1 (19) Visalia sandy loam soils usually consist of moderately well drained, very deep sandy loams derived from granitic alluvium. This type of soil is on alluvial fans and flood plains at a 2 to 5 percent slope. The soil is not hydric, however, it contains an unnamed hydric inclusion (NRCS, 1992).

The soils in this area do not meet the criteria set forth in the local or national hydric soils list (Welch, 1973, Reed 1988). However, when hydrophytic vegetation is present and the hydrology of an area is well defined, the soils are assumed to be hydric (ACOE, 1987).

In the APE, only a layer of sand over bedrock is present. Beneath the drainage areas where Gooding's black willows and other plants are present, the organic layer (O horizon) in the first 2 inches of soil has a chroma of 10YR 3/2. This is a low chroma color, which is an indicator of hydric soils. Sand is present beneath this organic layer and soil color should not be used as an indicator of hydric soils for most sandy soils. Three other hydric indicators in sandy soils are used in lieu of soil color: high organic matter in the surface horizon, streaking of subsurface horizons by organic matter, and organic hard pans (Environmental Laboratory, 1987). In the APE, no streaking of soils or organic hard pans are present. The majority of the soil in the APE is moist from the surface to at least

18 inches indicating that water collects in this area and drains through the soil. Mottles were not present which would indicate a fluctuating water table in the area.

Wetland Hydrology

The hydrology of this area is well defined. As noted, the APE encompasses the area beneath Lawson Valley Road bridge, the area of barren creek bed to the north of the bridge and upland areas. Within this area, the ordinary high water mark is apparent on the embankments that restrict the flow of water in the streambed.

4.0 MITIGATION MEASURES

The area beneath the bridge and surrounding the work area does not meet the three wetland criteria set forth by the ACOE. (Note that at the time of the field survey, the rip-rap had already been placed to stabilize the bridge embankment.) The area does satisfy the hydrology requirement, but does not satisfy the soils or vegetation requirements. While wetland hydrology is present, the creek bed in this area consists of a layer of disturbed sand over bedrock and is devoid of any vegetative covering.

The ACOE would be expected to take jurisdiction over the area under the bridge as the area qualifies as jurisdictional waters of the United States, even though the area does not qualify as a wetland according to the three ACOE wetland criteria. The area has an ordinary high water mark and is expected to connect with other waters of the United States. The ACOE should be consulted to determine if a nationwide permit is necessary for the proposed project.

The CDFG would be expected to take jurisdiction over the area because the hydrology satisfies one of the three ACOE wetland criteria. The CDFG should be consulted regarding the 1601 permit for the project. The coast live oak trees in the upland portion of the APE could be temporarily affected as the backhoe would have to pass beneath the dripline to enter the creek bed. There is one point of access to the creek bed. This area is highly disturbed and it appears that equipment has already been driven through the area to place rip-rap along the creek embankment. Repeated use of equipment in this area could affect roots of coast live oaks in the path. The CDFG should be consulted about this matter during the course of the 1601 permit application review.

The Lawson Valley Road Bridge Emergency Repair project is not expected to permanently impact ACOE wetlands or ACOE jurisdictional waters or CDFG wetlands. This project could temporarily impact a CDFG wetland and ACOE jurisdictional waters. As previously mentioned, the project could temporarily impact the coast live oak trees species found adjacent to the access route to the project area. The noise from the construction could temporarily affect bird or other wildlife species. If construction is necessary in areas where hydrophytic vegetation is present, an ACOE permit for construction within wetlands would be required. It does not appear that this will be necessary as the work area is large enough to allow a backhoe or similar equipment to complete bridge repairs without permanently or temporarily impacting these areas. Therefore, no mitigation measures are recommended for the proposed project.

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APPENDIX A

ANIMAL SPECIES OBSERVED ON OR ADJACENT TO THE PROJECT SITE

APPENDIX A

ANIMAL SPECIES OBSERVED ON OR ADJACENT TO THE PROJECT SITE

INVERTEBRATES
None observed

VERTEBRATES

Amphibians
None observed

Reptiles
None observed

Birds

Passer domesticus	House Sparrow

Mammals
None observed

APPENDIX B

WETLAND DELINEATION FORMS

Appendix E Arroyo Toad Habitat Assessment: Lawson Valley Bridge

VARANUS BIOLOGICAL SERVICES, INC.

26 March 2002

Nelson Olivas
County of San Diego
Department of Public Works
5471 Kearny Villa Road, #300
San Diego, CA 92123-1295

Subject: Arroyo Toad habitat assessment: Lawson Valley Bridge

Dear Nelson:

At the request of the County of San Diego, Department of Public Works I conducted a site visit to assess the potential for arroyo toads (*Bufo californicus*) to occur at or in the vicinity of the Lawson Valley Bridge. The bridge is located approximately 2.25 km west of the rural community of Lawson Valley in East San Diego County, California. The site is approximately 509 meters elevation, and defined by UTM coordinates: 11S, 520727mE, 3624066mN (NAD83).

The bridge is situated in a small grove of live oak trees (*Quercus agrifolia*) and is nestled between two disturbed areas, small residential "ranches" that gird the site. In the immediate vicinity of the bridge the creek bed is a mixture of pockets of sandy substrate, sandy loam, and large boulders. Most of the creek bed within 100 meters upstream and downstream of the bridge is shaded by mature live oaks. There is no arroyo toad breeding habitat in the immediate vicinity of the bridge. In general the area does not present typical breeding habitat for this species, that is, it is lacking areas of unshaded, low-gradient streambed that are composed of sandy and/or gravelly substrate. Downstream from the bridge the stream gradient is much greater (that is, less suitable). Upstream there is some variation in the stream gradient, and there are some areas where the stream gradient is relatively low. However, the area has been disturbed by development of the surrounding parcels. As evidence by its small and narrow character, Lawson Creek, a tributary to the Sweetwater River, lies within a relatively small watershed. Also, this site is relatively close to the Lawson Creek headwaters (near Lawson Peak), and probably rarely supports a water regime suitable to support arroyo toad breeding activity. In general, the area is unsuitable to support arroyo toad breeding.

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PH: 858-536-8762 FAX: 858-536-8781 E-MAIL: thevaranids@sbcglobal.net

Arroyo toads occur in several areas that surround the bridge site, however they are all located more than 5 kilometers distant (Figure 1) and thus unlikely to act as source populations for the Lawson Bridge area. All of the occupied sites are located in isolated pockets (that is, within limited areas of suitable breeding habitat away from development) of low gradient sandy streams within downstream (as opposed to near-headwater) portions of relatively large watersheds (for example, the Sweetwater River and Pine Creek). These situations each provide a reasonable chance of persistent water for several months each year, except during periods of extremely low rainfall. Arroyo toads have evolved to survive brief periods of drought; that is, they are able to survive several years of insufficient rainfall and stream flow. However, when water does flow through a potential breeding area it must persist for a period of two months or more. Lawson Creek in the vicinity of the County-maintained bridge does not provide the necessary persistence except in the wettest years.

Results of Field Surveys

I visited the site during the day of 22 March (from 1300 to 1330 hours under clear skies) and again on the night of 23 March (from 2100 to 2145 hours during a light rain). At the time of my visits, there was no detectable flow through this small and narrow creek channel. I found two small areas of ponded water (less than 1/20-acre each). Neither contained anuran (frogs or toads) eggs nor larvae. During my nighttime visit I did not detect arroyo toads. I found several pacific chorus frogs (*Pseudacris regilla*) calling from the vicinity of the creek, and two adult California toads (*Bufo boreas halophilus*) on Lawson Valley Road within 200 meters of the bridge. Both species are expected to occur at this site; neither is a listed or otherwise protected species.

Conclusion

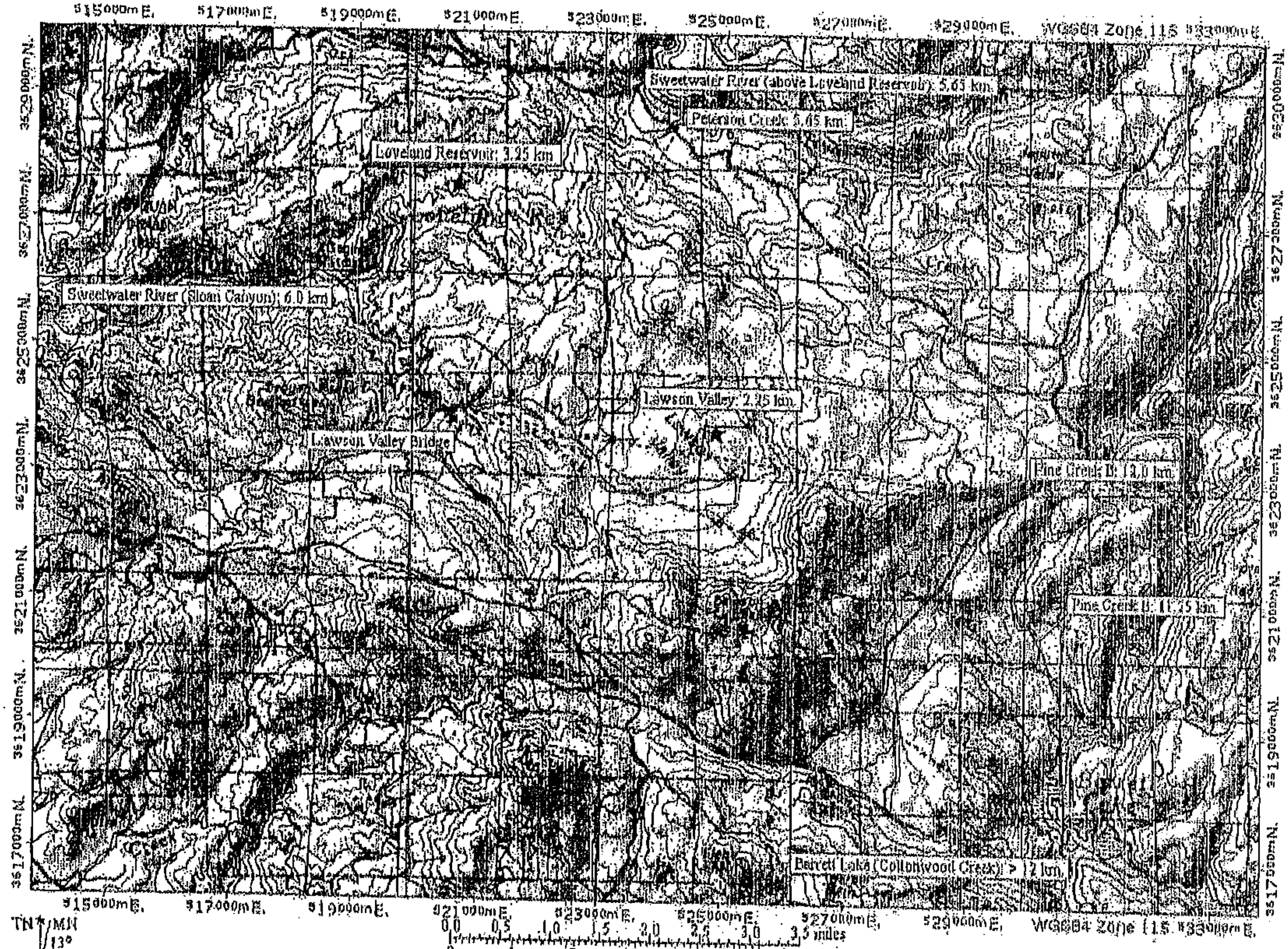
Based on the results of my site visit, an assessment of the immediate and adjacent habitat, limited size of and location within its watershed, and the distance from potential feeder populations, it is unlikely that arroyo toads are found in the vicinity of the Lawson Valley Bridge.

Please do not hesitate to call me if you have additional questions regarding my findings or to discuss the contents of this report.

Sincerely,

William E. Haas
Principal Biologist

Att: Figure, Lawson Valley Bridge location and surrounding arroyo toad populations



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Appendix F Willow Flycatcher Habitat Assessment: Lawson Valley Bridge

VARANUS BIOLOGICAL SERVICES, INC.

18 March 2003

Nelson Olivas
County of San Diego
Department of Public Works
5471 Kearny Villa Road, #300
San Diego, CA 92123-1295

Subject: Willow flycatcher habitat assessment: Lawson Valley Bridge

Dear Nelson:

At the request of the County of San Diego, Department of Public Works on 18 March 2003 Varanus Biological Services conducted a site visit to assess the potential for the southwestern willow flycatcher (*Empidonax traillii extimus*) to occur at or in the vicinity of the Lawson Valley Bridge. The bridge is located approximately 2.25 km west of the rural community of Lawson Valley in East San Diego County, California. The site is located at an elevation of approximately 509 m (815 ft) and defined by UTM coordinates: 11S, 520727mE, 3624066mN (NAD83).

The bridge is situated in a small grove of mature live oak trees (*Quercus agrifolia*) and is nestled between two disturbed areas; small residential "ranches" that gird the site. Most of the creek bed within 150 meters upstream and downstream of the bridge is shaded by the small, narrow grove of oaks. Beyond this limited area, the habitat becomes even less suitable for a riparian species. There is no willow flycatcher breeding habitat in the vicinity of the bridge:

1. An herbaceous understory is lacking (Figure A);
2. The oak woodland along the creek is extremely narrow (Figure B);
3. There are no dominant stands of willows (*Salix* spp.), alders (*Alnus* spp.) or ash trees (*Fraxinus* spp.) in the vicinity of the bridge (Figure C); and
4. Despite recent rains of substantial accumulation, the creek does not support flowing water (see discussion below) (Figure D).

Southwestern willow flycatchers typically nest in riparian associations that include willows and other riparian forest species. In some areas these may be replaced by non-native species that provide similar structure such as salt cedar (*Tamarix* spp.). At one site in San Diego County along the upper San Luis Rey River, southwestern willow flycatchers nest primarily in coast live oak trees. That situation is unique among all southwestern willow flycatcher breeding locales and is related to a suite of factors that occur nowhere else in the species' range (Haas *in press*). Most southwestern willow flycatcher breeding locales are also characterized by the presence of surface flows, pooled water, or minimally moist soils

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throughout the breeding season. As evidenced by its small and narrow character (Figure E), Lawson Creek, a tributary to the Sweetwater River, lies within a relatively small watershed. Also, this site is relatively close to the Lawson Creek headwaters (near Lawson Peak), and under recent hydrologic conditions Lawson Creek has probably never supported a water regime suitable to sustain willow flycatcher breeding activity. Development in the vicinity of the bridge is additionally contraindicative of the presence of this extremely rare riparian species that is virtually never found in the vicinity of residential disturbance.

Ultimately, southwestern willow flycatchers do not occur in the vicinity of the bridge. The nearest recent occurrences of southwestern willow flycatcher breeding activity have been documented at the Sweetwater Reservoir (a distance of more than 11 miles/18.3 km) (W. Haas pers. obs.) and at the upper end of El Capitan Reservoir (a distance of more than 15 miles/23.5 km) along the San Diego River (P. Unitt pers. com.). Lacking an adequate amount of suitable habitat and without a nearby feeder population, it is extremely unlikely that the southwestern willow flycatcher, a colonial species, would occur at this site even as a migrant or transient.

Conclusion

Based on the results of our site visit, an assessment of the immediate and adjacent habitat, limited size of and location within its watershed, and the distance from potential feeder populations, and our intimate knowledge of this extremely rare species, it is unlikely that southwestern willow flycatchers occur in the vicinity of the Lawson Valley Bridge.

Please do not hesitate to call me if you have additional questions regarding my findings or to discuss the contents of this report.

Certification

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for the requested biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Signed_____ Date: _____

William E. Haas, Principal Biologist

Figure A. Lawson Creek; understory of the oak woodland (18 March 2003)

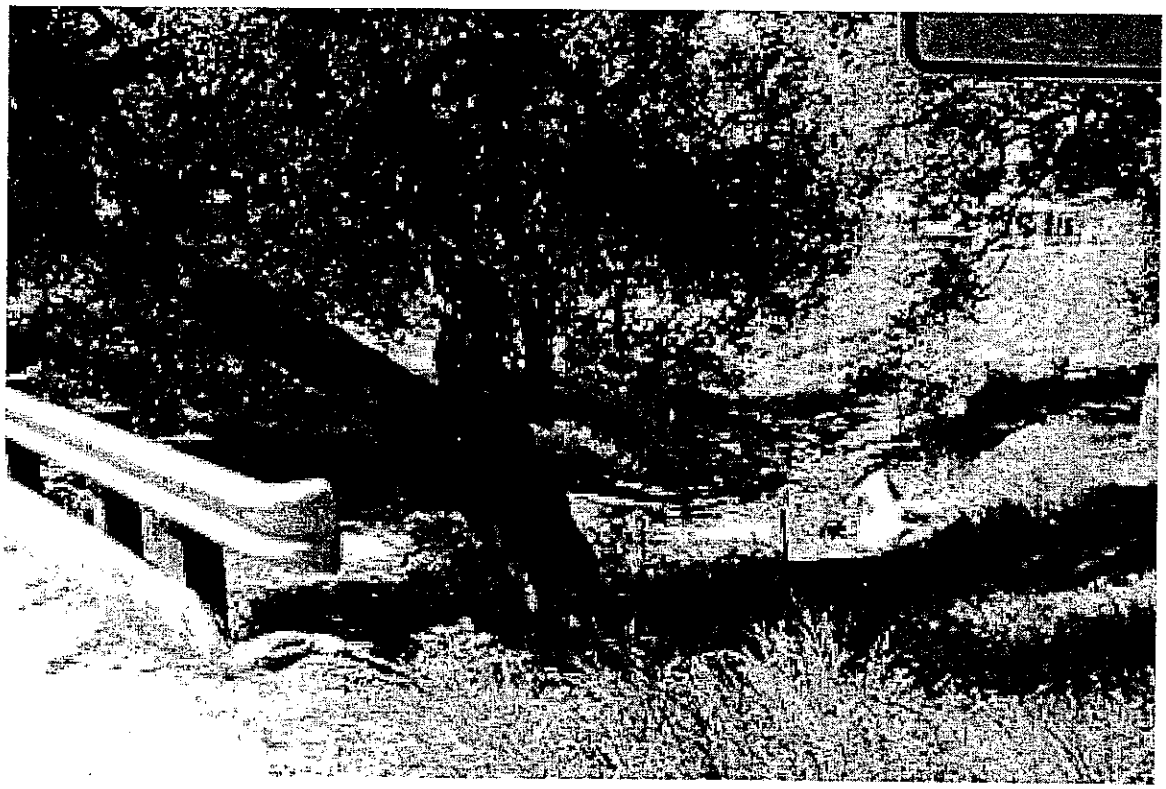

Figure B. Lawson Creek, downstream view of oak woodland (18 March 2003)

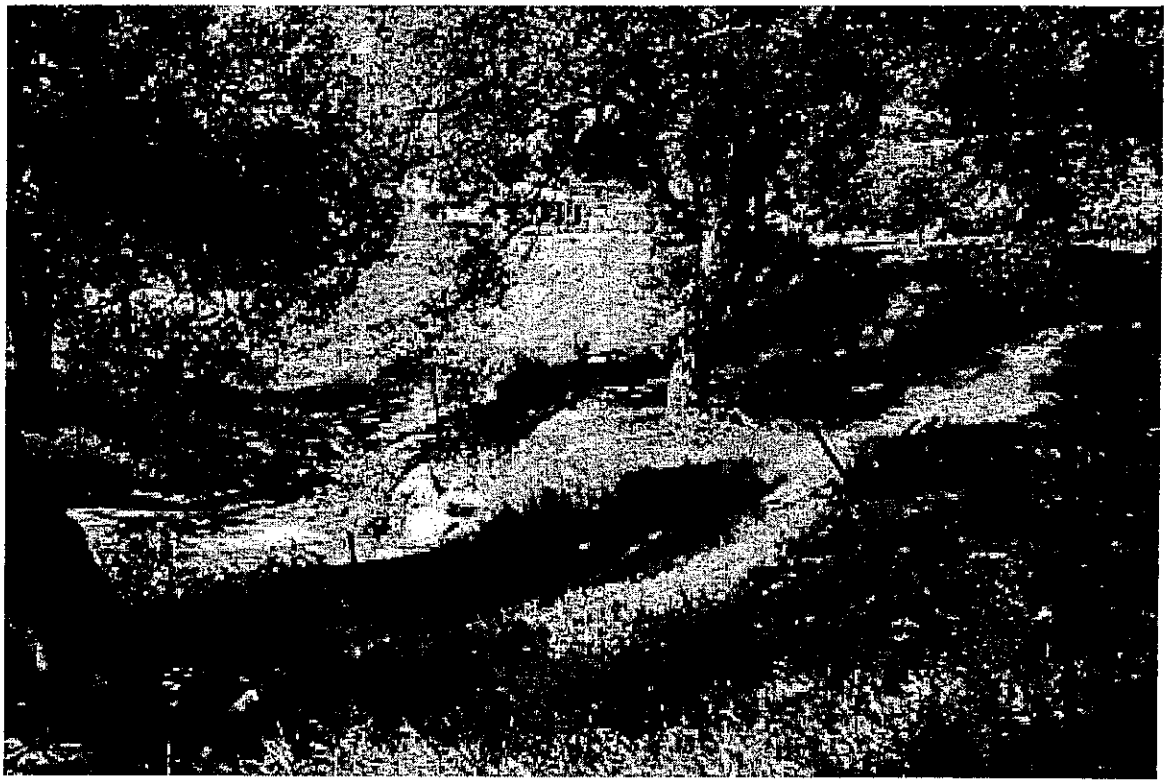

Figure C. Lawson Creek and attendant vegetation (18 March 2003)

Figure D. Lawson Creek, three days after 2-inch rainfall of 15 March 2003

Figure E. Lawson Creek at Lawson Valley Bridge (18 March 2003)

Appendix G Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Lawson Valley Bridge Replacement Project City/County: Alpine/San Diego Sampling Date: 30DEC08

Applicant/Owner: City of San Diego State: CA Sampling Point: TP-1

Investigator(s): Jillian Bates Section, Township, Range: Section 28, Township 1 South, Range 2 East

Landform (hillslope, terrace, etc.): valley Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): LRR-C Lat: 32.754835 Long: -116.772811 Datum: NAD 83

Soil Map Unit Name: Ramona Sandy Loam, 5 to 9 Percent Slopes, Eroded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? No Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks: ACOE wetlands present. CDFG riparian habitat present along the streambank and floodplain terraces above the ordinary high water.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus agrifolia*	90	Y	NL
2.			
3.			
4.			
Total Cover:	90	(50%=45	20%=18)
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	50	Yes	FACW
2. *Platanus racemosa*	20	Yes	FACW
3. *Salix lasiolepis*	20	Yes	FACW
4. *Ambrosia psilostachya*	5	No	FAC
5. *Epilobium sp.*	5	No	FAC
Total Cover:	100	(50%=50	20%=20)
Herb Stratum			
1. *Scirpus microcarpus*	10	No	OBL
2. *Clematis ligusticifolia*	30	Yes	FAC
3. *Juncus*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
Total Cover:	45	(50%=23	20%=9)
Woody Vine Stratum			
1.			
2.			
Total Cover:		(50%=	20%=)

% Bare Ground in Herb Stratum 55 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No

Remarks: Southern willow scrub occurring within the understory of coast live oak riparian forest

SOIL

Sampling Point: TP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-3	10 YR 3/2	100					Sandy Loam	
3-6	2.5 YR 4/3	20	10 YR 7/4	20			Sandy	No Redox, 2 most dominant colors

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks: Soils moist throughout. Water table reached at six inches.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 6

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Test Pit located upstream of Lawson Valley bridge on sandbar within the creek channel, approximately two feet from flowing water. Shelving and cut banks also visible along creek banks two to eight feet high, most likely due to historical flooding event.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Lawson Valley Bridge Replacement Project City/County: Alpine/San Diego Sampling Date: 30DEC08

Applicant/Owner: City of San Diego State: CA Sampling Point: TP-2

Investigator(s): Jillian Bates Section, Township, Range: Section 28, Township 1 South, Range 2 East

Landform (hillslope, terrace, etc.): valley Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): LRR-C Lat: 32.754835 Long: -116.772811 Datum: NAD 83

Soil Map Unit Name: Ramona Sandy Loam, 5 to 9 Percent Slopes, Eroded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? No Are "Normal Circumstances" present? Yes X No ____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	**Yes** X **No** ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks: ACOE wetlands present. CDFG riparian habitat present along the streambank and floodplain terraces above the ordinary high water.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus agrifolia*	90	Y	NL
2.			
3.			
4.			
Total Cover:	90	(50%=45	20%=18)
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	15	Yes	FACW
2. *Salix lasiolepis*	15	No	FACW
3. *Scirpus microcarpus*	5	No	OBL
4. *Juncus sp.*	5	No	OBL
5.			
Total Cover:	30	(50%=15	20%=6)
Herb Stratum			
1. *Clematis ligusticifolia*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	20	(50%=10	20%=4)
Woody Vine Stratum			
1.			
2.			
Total Cover:		(50%=	20%=)

% Bare Ground in Herb Stratum 80 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

____ Prevalence Index is ≤3.0[1]

____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Southern willow scrub occurring within the understory of coast live oak riparian forest

SOIL

Sampling Point: TP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-3	10 YR 3/2	100					Sandy Loam	
3-6	2.5 YR 4/3	20	10 YR 7/4	20			Sandy	No Redox, 2 most dominant colors

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks: Soils moist throughout. Water table reached at eight inches.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 8

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Test Pit located upstream of Lawson Valley bridge adjacent to transitional wetland areas along the bank of the creek. Shelving and cut banks visible along creek banks and range from two to eight feet high, but these cuts are most likely due to historical flooding event.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Lawson Valley Bridge Replacement Project City/County: Alpine/San Diego Sampling Date: 30DEC08

Applicant/Owner: City of San Diego State: CA Sampling Point: TP-3

Investigator(s): Jillian Bates Section, Township, Range: Section 28, Township 1 South, Range 2 East

Landform (hillslope, terrace, etc.): valley Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): LRR-C Lat: 32.754835 Long: -116.772811 Datum: NAD 83

Soil Map Unit Name: Ramona Sandy Loam, 5 to 9 Percent Slopes, Eroded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? No Are "Normal Circumstances" present? Yes X No ____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?**	**Yes** ____	**No** X
Hydric Soil Present?	Yes X	No ____			
Wetland Hydrology Present?	Yes X	No ____			

Remarks: ACOE non-wetland waters of the U.S. present. CDFG riparian habitat present along the streambank and floodplain terraces above the ordinary high water.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus agrifolia*	100	Yes	NL
2.			
3.			
4.			
Total Cover:	100	(50%=50	20%=20)
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:		(50%=	20%=)
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:		(50%=	20%=)
Woody Vine Stratum			
1.			
2.			
Total Cover:		(50%=	20%=)

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%

____ Prevalence Index is ≤3.0[1]

____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: Streambed with less than five percent vegetation occurring within the understory of coast live oak riparian forest

SOIL

Sampling Point: TP-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-3	10 YR 4/3	100					Sandy Loam	
3-8	10 YR 3/2	100					Sandy Loam	
8-16	2.5 YR 4/3	25	10 YR 7/4	25			Sandy	No Redox, 2 most dominant colors

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks: Soils moist at three inches. Hit root at 16 inches, expect water table at 18 inches

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 3

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Test Pit located upstream of Lawson Valley bridge on south-facing slope of streambank, approximately five feet from flowing water. Shelving and cut banks also visible along creek banks two to eight feet high, most likely due to historical flooding event.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Lawson Valley Bridge Replacement Project City/County: Alpine/San Diego Sampling Date: 30DEC08

Applicant/Owner: City of San Diego State: CA Sampling Point: TP-4

Investigator(s): Jillian Bates Section, Township, Range: Section 28, Township 1 South, Range 2 East

Landform (hillslope, terrace, etc.): valley Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): LRR-C Lat: 32.754835 Long: -116.772811 Datum: NAD 83

Soil Map Unit Name: Ramona Sandy Loam, 5 to 9 Percent Slopes, Eroded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? No Are "Normal Circumstances" present? Yes X No ____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?**	**Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X		
Wetland Hydrology Present?	Yes ____	No X		

Remarks: No ACOE wetlands nor Non-wetland waters of the U.S. present. CDFG Coast Live Oak Riparian Forest present upland, above the willow riparian zone

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus agrifolia*	90	Yes	NI
2.			
3.			
4.			
Total Cover:	90	(50%=45	20%=18)
Sapling/Shrub Stratum			
1. *Rosa californica*	20	Yes	FAC
2.			
3.			
4.			
5.			
Total Cover:	20	(50%=10	20%=4)
Herb Stratum			
1. *Avena fatua*	50	Yes	NI
2. *Digitaria sanguinalis*	50	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	100	(50%=50	20%=20)
Woody Vine Stratum			
1.			
2.			
Total Cover:		(50%=	20%=)

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%

____ Prevalence Index is ≤3.0[1]

____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: Coast live oak riparian forest with herbacious understory of non-native grassland.

SOIL

Sampling Point: TP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
1-18	10 YR 3/2	100					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: Soils moist throughout.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Test Pit located upland, east of Lawson Valley bridge and north of the creek channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Lawson Valley Bridge Replacement Project City/County: Alpine/San Diego Sampling Date: 30DEC08

Applicant/Owner: City of San Diego State: CA Sampling Point: TP-5

Investigator(s): Jillian Bates Section, Township, Range: Section 28, Township 1 South, Range 2 East

Landform (hillslope, terrace, etc.): valley Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): LRR-C Lat: 32.754835 Long: -116.772811 Datum: NAD 83

Soil Map Unit Name: Ramona Sandy Loam, 5 to 9 Percent Slopes, Eroded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? No Are "Normal Circumstances" present? Yes X No ____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	**Yes** X **No** ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks: ACOE wetlands present. CDFG riparian habitat present along the streambank and floodplain terraces above the ordinary high water.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus agrifolia*	25	Yes	NL
2. *Platanus racemosa*	25	Yes	FACW
3. *Salix lasiolepis*	25	Yes	FACW
4. *Baccharis salicifolia*	25	Yes	FACW
Total Cover:	100	(50%=50	20%=20)
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	15	Yes	FACW
2. *Ambrosia psilostachya*	5	No	FAC
3. *Scirpus microcarpus*	5	No	OBL
4. *Juncus sp.*	5	No	OBL
5. *Conyza bonariensis*	15	Yes	NI
Total Cover:	45	(50%=23	20%=8)
Herb Stratum			
1. *Clematis ligusticifolia*	20	Yes	FAC
2. *Scirpus microcarpus*	15	Yes	OBL
3. *Anemopsis californica*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
Total Cover:	40	(50%=20	20%=8)
Woody Vine Stratum			
1.			
2.			
Total Cover:		(50%=	20%=)

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

____ Prevalence Index is ≤3.0[1]

____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Southern willow scrub occurring within the understory of coast live oak riparian forest

SOIL

Sampling Point: TP-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
1-3	10 YR 3/2	100					Sandy Loam	
3-6	2.5 YR 4/3	25	10 YR 7/4	25			Sandy	No Redox, 2 most dominant colors

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks: Soils moist throughout. Water table reached at twelve inches.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes X No ___ Depth (inches): 12

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Test Pit located downstream of the bridge on sandbar within the creek channel, approximately two feet from flowing water.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Lawson Valley Bridge Replacement Project City/County: Alpine/San Diego Sampling Date: 30DEC08

Applicant/Owner: City of San Diego State: CA Sampling Point: TP-6

Investigator(s): Jillian Bates Section, Township, Range: Section 28, Township 1 South, Range 2 East

Landform (hillslope, terrace, etc.): valley Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): LRR-C Lat: 32.754835 Long: -116.772811 Datum: NAD 83

Soil Map Unit Name: Ramona Sandy Loam, 5 to 9 Percent Slopes, Eroded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? No Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?**	**Yes** X **No**
Hydric Soil Present?	Yes X No		
Wetland Hydrology Present?	Yes X No		

Remarks: ACOE wetlands present. CDFG riparian habitat present along the streambank and floodplain terraces above the ordinary high water.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus agrifolia*	10	Yes	NI
2. *Salix lasiolepis*	10	Yes	FACW
3.			
4.			
Total Cover:	20	(50%=10	20%=4)
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	25	Yes	FACW
2. *Conyza bonariensis*	5	No	NI
3. *Typha latifolia*	65	Yes	OBL
4. *Juncus sp.*	5	No	OBL
5.			
Total Cover:	100	(50%=50	20%=20)
Herb Stratum			
1. *Clematis ligusticifolia*	20	Yes	FAC
2. *Scirpus microcarpus*	5	No	OBL
3. *Anemopsis californica*	5	No	OBL
4. *Polypogon monspeliensis*	10	No	FACW
5.			
6.			
7.			
8.			
Total Cover:	40	(50%=20	20%=8)
Woody Vine Stratum			
1.			
2.			
Total Cover:		(50%=	20%=)

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No

Remarks: Valley freshwater moarsh occurring within the understory of coast live oak riparian forest

SOIL

Sampling Point: TP-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-6	Glay 3N	100					Sandy Loam	
6-12	2.5 YR 4/3	25	10 YR 7/4	25			Sandy	No Redox, 2 most dominant colors

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- X Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks: Soils moist throughout. No sulfuric smell. Water table reached at three inches.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes X No ___ Depth (inches): 3

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Test Pit located downstream of the bridge on sandbar within the creek channel, approximately one foot from flowing water.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Lawson Valley Bridge Replacement Project City/County: Alpine/San Diego Sampling Date: 30DEC08

Applicant/Owner: City of San Diego State: CA Sampling Point: TP-7

Investigator(s): Jillian Bates Section, Township, Range: Section 28, Township 1 South, Range 2 East

Landform (hillslope, terrace, etc.): valley Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): LRR-C Lat: 32.754835 Long: -116.772811 Datum: NAD 83

Soil Map Unit Name: Ramona Sandy Loam, 5 to 9 Percent Slopes, Eroded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? No Are "Normal Circumstances" present? Yes X No ____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	**Yes** X **No** ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks: ACOE wetlands present. CDFG riparian habitat present along the streambank and floodplain terraces above the ordinary high water.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus agrifolia*	25	Yes	NL
2. *Platanus racemosa*	20	Yes	FACW
3. *Salix lasiolepis*	30	Yes	FACW
4.			
Total Cover:	75	(50%=38	20%=15)
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	20	Yes	FACW
2. *Ambrosia psilostachya*	20	Yes	FAC
3. *Conyza bonariensis*	20	Yes	NI
4. *Rosa californica*	20	Yes	FAC
5.			
Total Cover:	80	(50%=40	20%=16)
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:		(50%=	20%=)
Woody Vine Stratum			
1.			
2.			
Total Cover:		(50%=	20%=)

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

____ Prevalence Index is ≤3.0[1]

____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Southern willow scrub occurring within the understory of coast live oak riparian forest

SOIL

Sampling Point: TP-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-18	10 YR 3/2	100					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks: Soils moist throughout.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Test Pit located downstream of Lawson Valley bridge on north-facing slope of streambank, approximately five feet from flowing water.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Lawson Valley Bridge Replacement Project City/County: Alpine/San Diego Sampling Date: 30DEC08

Applicant/Owner: City of San Diego State: CA Sampling Point: TP-8

Investigator(s): Jillian Bates Section, Township, Range: Section 28, Township 1 South, Range 2 East

Landform (hillslope, terrace, etc.): valley Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): LRR-C Lat: 32.754835 Long: -116.772811 Datum: NAD 83

Soil Map Unit Name: Ramona Sandy Loam, 5 to 9 Percent Slopes, Eroded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? No Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?**	**Yes**	**No X**
Hydric Soil Present?	Yes	No X			
Wetland Hydrology Present?	Yes	No X			

Remarks: No ACOE wetlands nor Non-wetland waters of the U.S. present. CDFG Coast Live Oak Riparian Forest present upland, above the willow riparian zone

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus agrifolia*	10	No	NI
2.			
3.			
4.			
Total Cover:	10	(50%=5	20%=2)
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:		(50%=	20%=)
Herb Stratum			
1. *Avena fatua*	33	Yes	NI
2. *Digitaria sanguinalis*	34	Yes	FACU
3. *Bromus sp.*	33	Yes	NI
4.			
5.			
6.			
7.			
8.			
Total Cover:	100	(50%=50	20%=20)
Woody Vine Stratum			
1.			
2.			
Total Cover:		(50%=	20%=)

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes No X

Remarks: Non-native grassland

SOIL

Sampling Point: TP-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
1-18	10 YR 3/2	100					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Test Pit located upland, west of Lawson Valley bridge and south of the creek channel.